NOVEMBER, 1960

ARMED FORCES Management

PUBLISHED FOR THE MILITARY SERVICES OF THE FREE WORLD

THIS IS THE DEPARTMENT OF DEFENSE

Top Management's Annual Report on Major Problems And Progress—See p. 5

Breaks message center bottlenecks

...simultaneously receives, relays and numbers tapes- automatically

This Kleinschmidt Torn Tape Relay Unit ends military communications traffic jams. It prints and perforates each incoming message and automatically numbers all messages to be relayed to one or one hundred receivers in the network.

Fast. Accurate. Efficient. Kleinschmidt's complete line of fine equipment, switching centers and systems are in U. S. Military use throughout the world. *Contact us to arrange for a discussion with our equipment and systems engineers.*

SCM KLEINSCHMIDT
DIVISION OF SMITH-CORONA MARCHANT INC.

Lake-Cook Road, Deerfield, Illinois · Telephone Windsor 5-1000

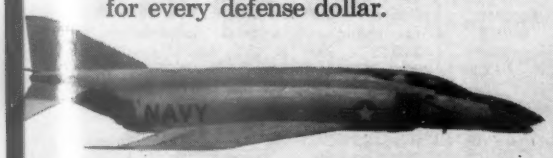
THE WINGS OF A PHANTOM

These are the wings of a unique aircraft—Phantom II. They are sharply tapered, sharply swept and extremely thin. They are an important example of highly advanced aerodynamic design.

In over-all performance the wing design of the Phantom II enables it to operate from short fields and carrier decks and fly to a height of 98,560 feet—and still attain a level-flight speed of over 1500 mph.

The wings of the Phantom II are not merely airfoils. For solid aerodynamic stability above Mach 2, the outer panels of the knife-like foils sweep up at a dihedral of 12 degrees. Both leading and trailing edge flaps, augmented by boundary layer control, assure greatly increased lift for take-off and landing. The ailerons and spoilers provide a high degree of lateral control—for ground attack operations, for low approach speeds and for maneuvering at extreme altitudes.

Altitude, speed and weapon-carrying capabilities have been combined in the Phantom II to a degree never before achieved in a combat aircraft. Now in production, the Phantom II offers flexible operational and armament capabilities for either police action or total war deterrence. The most versatile combat aircraft in existence—and the one with the highest performance—the Phantom II insures maximum defense for every defense dollar.



MCDONNELL

Designers and builders of F-101 Voodoos • Project Mercury Space Capsules • Talos Airframes and Propulsion Systems • Quail Decoy Missiles • Rotorcraft • Electronics Systems

MCDONNELL AIRCRAFT ST. LOUIS, MO.

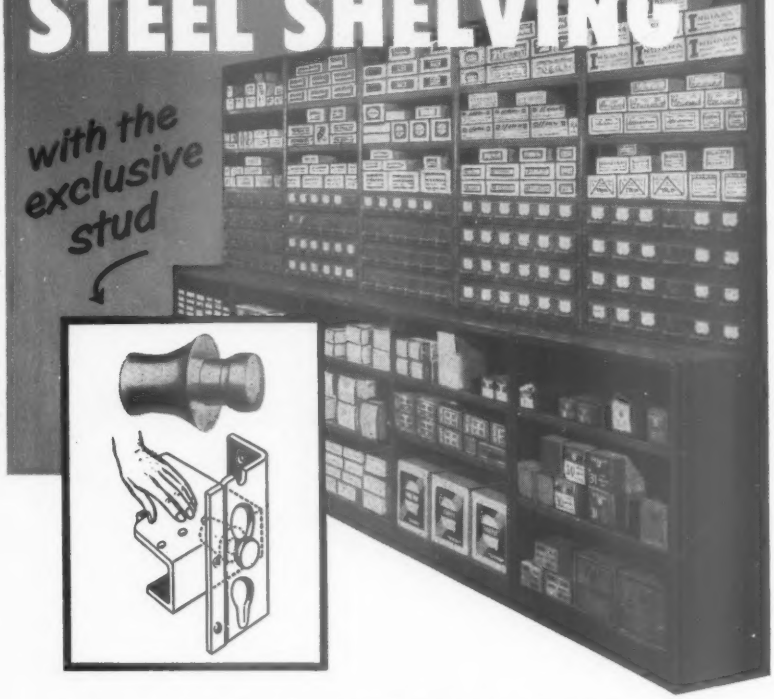
"The more you load an Equipto shelf the tighter it grips all by itself!"

EQUIPTO

IRON-GRIP

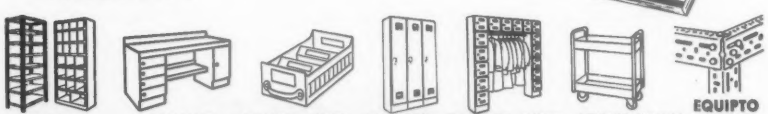
STEEL SHELVING

with the exclusive stud



No nuts, bolts or tools needed when adjusting Equipto Iron-Grip Shelving. Exclusive steel stud permits 60% faster shelf adjustment on 1½" centers. The more you load it, the tighter it grips, yet shelf may be moved easily. You can vary arrangement of drawers, dividers, or shelves to suit changing storage needs. Four uprights per unit allow units to be moved without disturbing adjacent units.

Equipto Iron-Grip Shelving is immediately available from stock in all sizes, either open or closed, with or without dividers, bin fronts, drawers or label holders. Write today for complete reference manual No. 485; also free booklet "HOW TO SOLVE YOUR STORAGE PROBLEMS".



SHELVING BENCHES DRAWER UNITS LOCKERS EQUIPTO ROBE STOCK CARTS EQUIPTO ANGLE

Equipto

614 Prairie Avenue
Aurora, Illinois

C. W. Borklund ..... Editor
Fred Hamlin ..... Associate Editor
James Lewis ..... Editorial Assistant
William H. Martin ..... Art Director
Bacil Guiley ..... Asst. Art Director
John Walen ..... Production Manager

★

Business Staff

Edward D. Muhlfeld ..... Publisher
Walton E. Brown Advertising Sales Manager
Elsie Gray ... Advertising Service Manager
Carolyn DallaValle ... Production Assistant
Eugene White ..... Circulation Manager
George Peterson
Circulation Fulfillment Manager

★

Regional Advertising Offices

New York 17, New York
20 East 46th St., YUkon 6-3900

Beverly Hills, Calif.
8929 Wilshire Blvd., OLeander 5-9161

Chicago 2, Ill.
139 N. Clark St., CEntral 6-5804

Detroit 2, Mich.
412 Fisher Building, TRinity 5-2555

Geneva, Switzerland
Anthony Vandyk, European Director, 10 Rue Grenus, Phone 321044, Cable AMERAV GENEVA

London W.1, England
Frank V. Norall, Norall & Hart, 28 Bruton St., GRovenor 8356

Dallas, Tex.
202 Wynnewood Professional Bldg., WHitehall 3-4266

Miami, Florida
208 Almeria Avenue, HIghland 4-8326

Paris, France
Jean-Marie Riche, 11 Rue Condorcet, TRU 15-39

★

Published monthly by American Aviation Publications, Inc., 1001 Vermont Ave., N.W., Washington 5, D.C. Telephone: STerling 3-5400.

Wayne W. Parrish
President

Leonard Eiserer
Vice Pres. and Gen. Manager

Fred S. Hunter
Vice Pres. and Editorial Dir.

★

Unsolicited manuscripts should be accompanied by a stamped, self-addressed return envelope. Armed Forces Management does not assume responsibility for the return of any unsolicited material.

★

Published monthly by American Aviation Publications, Inc., Washington, D.C. Printed at The Telegraph Press, Harrisburg, Pa. Accepted as controlled circulation publication at Harrisburg, Pa. and Washington, D.C.
Copyright 1960 by American Aviation Publications, Inc.
Title U.S. Reg. Four weeks' notice before next publication date required for change of address. Subscription Price: $10.00 a year in U.S. and Canada, $15.00 overseas, single copy price $1.00.

ARMED FORCES Management

PUBLISHED FOR THE MILITARY SERVICES OF THE FREE WORLD

NOVEMBER, 1960

Volume 7—No. 2

FEATURES

1961: Year of the Donnybrooks 7

Defense Organization: The trend to unification 21

Organization chart: Office/Secretary of Defense 32

Profile: Gen. Lyman L. Lemnitzer 34
"Combining would not eliminate differences."

Organization chart: Department of the Army 36

Profile: Gen. George H. Decker 38
"If you don't fight, you're dead."

Organization chart: Department of the Navy 40

Profile: Adm. Arleigh A. Burke 42
"No better than the men who man it."

Organization chart: Department of the Air Force 44

Profile: Gen. Thomas D. White 46
"I foresee a single service."

Pentagon directory 48
Includes the names and addresses (in the Pentagon) of all key top level executives.

Missiles vs. Modernization 64
Outline of the brewing debate on "deterrence" or "counterforce."

JCS or Single Service: The Challenge is to Leaders 72
Rumblings over the horizon indicate a new drive is mounting for major Defense organizational change.

NATO: The Longer We Wait 78
NATO is embarking on a period of accelerated transition. Will the U.S. have the foresight to answer the challenge?

SEATO: Where There is a Significant Difference 84
Why SEATO recognizes that there is more to deterrence than just military hardware.

Problems and Progress in:

Research and Development 89
Just who is responsible for what?

Procurement 97
On the verge of turning policy into practice.

Supply and Logistics 103
What all the new top level activity will mean.

The Budget 109
In perspective, why there will be no dollar panacea in 1961.

Single Management 115
Here are the results single management promises.

Properties and Installations 119
What is involved in an apparently run-of-the-mill operation.

Personnel 122
Where kibitzing by authority makes the answers hard to find.

FEATURED NEXT MONTH

Exclusive interview with Army R&D boss Trudeau . . . The Gross error in Industrial Fund management . . . What ARDC hopes to do about the aging R&D officer.

CHANCE VOUGHT'S DIVERSIFICATION AND SPECIALIZATION

ARE PRODUCING THESE

RESULTS

AERONAUTICS DIVISION

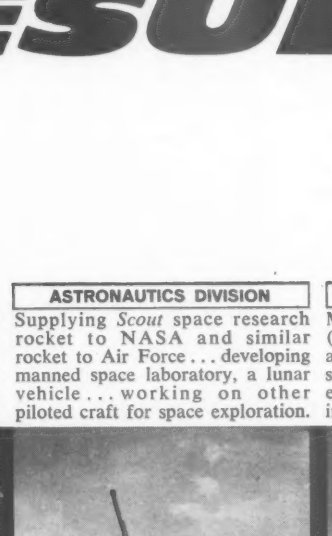
Will deliver new F8U-2N all-weather *Crusader* fighters to Fleet beginning this year through 1962 . . . developing sonobuoy and other anti-submarine equipment under Navy contracts . . . has study contract for nuclear-powered missile, SLAM.

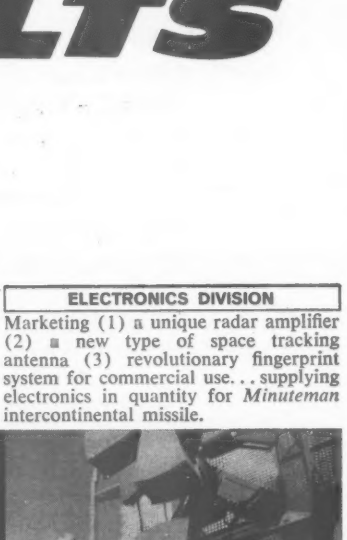
ASTRONAUTICS DIVISION

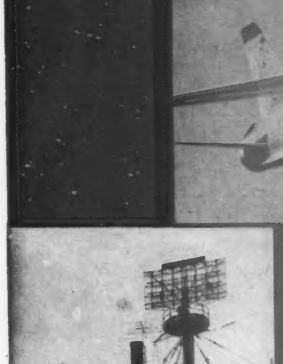
Supplying *Scout* space research rocket to NASA and similar rocket to Air Force . . . developing manned space laboratory, a lunar vehicle . . . working on other piloted craft for space exploration.

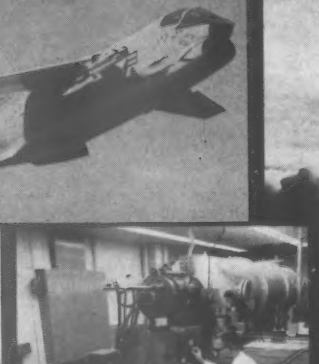
ELECTRONICS DIVISION

Marketing (1) a unique radar amplifier (2) a new type of space tracking antenna (3) revolutionary fingerprint system for commercial use. . . supplying electronics in quantity for *Minuteman* intercontinental missile.









VOUGHT RANGE SYSTEMS

Basic research in energy sources, bio-astronautics, aerophysics . . . providing the new knowledge essential to product development in all Vought Divisions.

RESEARCH CENTER

Operating space tracking stations world-wide . . . instrumenting the first tracking ship for the Pacific Missile Range . . . providing high speed target drone service for Air Force missiles.

VOUGHT INDUSTRIES

Nation's leading producer of mobile homes . . . 14 plants and 1,400 dealers offer homeowners wide choice of design, new guarantees, improved financing with the 21 products that carry the V.I.I. brand.

INFORMATION SYSTEMS INC.,

a Vought subsidiary, is developing industrial automation and control systems . . . is one of the foremost producers of data loggers and special purpose control computers.

CHANCE VOUGHT

DALLAS TEXAS

AERONAUTICS ASTRONAUTICS ELECTRONICS RANGE SYSTEMS RESEARCH

1961: Year of the Donnybrooks

ALMOST since the ink was dry on our "Executive Report" last November, the ARMED FORCES MANAGEMENT staff has been interviewing people, gathering and collating material for this year's version.

One reason it takes so long (and maybe even a year isn't long enough) is that this year's approach is far more comprehensive. Rather than lay down the bare cold bones, as before, of defense organization, we have isolated the major problem areas of military top managers, outlined problems and progress of the past year, pointed a few direction finders into the future.

In the process of assimilating all this expertise, AFM has acquired the clear indication that, regardless of who sits in the executive catbird seat or the legislative halls of Capitol Hill, 1961 promises to be one of the most significant years in Defense history. That amazing Pentagon puzzle palace will boil with controversy as rarely before. The hot debates and major decisions promise to start flowing as soon as the full management team returns to Washington from its Christmas holiday vacation.

Military Strategy—"Counterforce" advocates have had enough of "minimum deterrence," are waiting only for the Congressional forum to open up before they start firing away. Depending on who wins, the implications in defense organization, relationships to our allies, hardware development and a host of other areas are far reaching and significant.

Defense Organization—Again, advocates of a single military staff (at the top) have had enough of committee indecision and military competitive battling for resources. To them, the 1958 Reorganization was a staggered step backwards. Idle esthetic debate is no longer enough. They represent significant active military influence and, to them, it is time to force the issue.

NATO—Year of decision has come in NATO as well. Our allies are pressing for answers, say we have been sitting on our hands long enough. And clearly, answers of some sort must be forthcoming. Either NATO improves its operation and capability along the lines indicated or NATO will wither on the vine—something the United States, as well as the other members, dare not permit.

Research and Development—Should Defense Research and Engineering be allowed to continue tightening its control over the whole massive military R&D effort? Or, as the people they have squeezed are beginning to complain, should they quit reaching down into service programs and start doing "the coordinating job they were supposed to do in the first place?"

All three services, Army, Navy (the Bureau of Weapons) and Air Force have major plans for improving their R&D operations, will begin testing them next year. Some require legislation. Some require "only" hard internal administrative decisions. All of them will affect people, dollars and programs.

Supply and Logistics—After over a year in coming up with what is now a set, solid policy agreement, the military buying power is ready to take its case to Congress, begin making its policy something real and not just a lot of words on paper. Will Congress buy it, or, particularly in the area of negotiated procurement where the debate has gone on long enough, will Congress insist on changes?

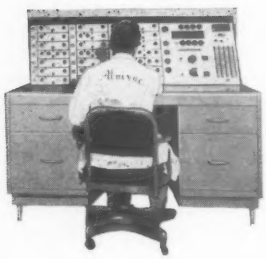
Management of Resources—The tail end of 1960 and early 1961 will be a critical time, as well, for the Armed Forces Supply Support Center in its back-breaking efforts to achieve economy. Its now nearly completed studies recommend major alterations in large chunks of defense management, e.g., the philosophy on use of single managers. Decision outcome on those proposals will determine not only immediate improvement in the control of buying areas concerned but also the future role of AFSSC in defense operations.

People—New proposals for personnel management are likely to crop up again in 1961. Many of them will be the same sort of "bits and pieces" miasma which has made military personnel management such a monumentally confused question mark in the past (particularly in the legislative field). But there are signs that, in at least some military departments, there will be a strong attempt to make organized sense out of improving the attractiveness of military careers—for both uniformed and civilian personnel.

Our military readers, we feel, deserve to know what is happening and what is likely to happen—at least as soon if not sooner than anybody else interested in the Pentagon's business. You should be briefed on both sides of all the arguments *now*—before they are clouded by acrid emotional smoke.

As a key member of the military team, you will no doubt become embroiled in some aspect of at least one of the arguments, when the debates well up into headline hassles. Many of the clues to what is ahead are here, voiced by top military leaders—those making plans, doing 1961's preparatory staff work now. Course charting controversies are on the horizon and it should be an exciting year.

Bill Borklund



THE UNIVAC A.C.T.

A.C.T. *had* to be made! No other automatic component tester could meet the demands of Univac quality control.

Univac reliability standards demanded a new means of component testing involving unprecedented speed, flexibility and reliability.

The result was A.C.T. (Automatic Component Tester) which measures and records a component parameter every second — 60 times faster than manual inspection.

One of A.C.T.'s early assignments was a 100% checkout of all 90,000 components in a Univac computer system. Each was checked on 10 parameters — a total of 900,000 critical tests. Many thousands of man hours were cut to a few hundred hours. Human failings of fatigue and misinterpretation were completely avoided.

But speed is only one of A.C.T.'s many merits. With great flexibility, it automatically measures resistors, diodes, transistors, connectors and capacitors with absolute protection against damage during testing.

A.C.T. is currently on an 18-hour day, six-day week in the continuing mission of Univac reliability.

Univac reliability insisted on the creation of A.C.T. Univac ingenuity and capability produced it.

Military Dept., Remington Rand Univac, Division of Sperry Rand Corporation, Univac Park, St. Paul 16, Minn.

UNIVAC ®

CAPABILITY–INGENUITY–RELIABILITY for Business, Industry and Defense at **REMINGTON RAND UNIVAC**

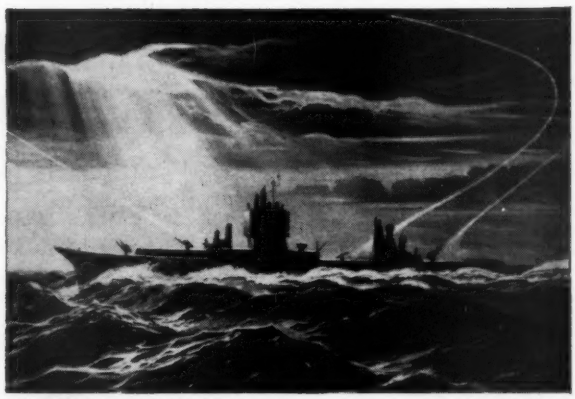
Denison and Denison HydrOILics are registered trademarks of Denison Eng. Div., ABSCO

DENISON HydrOILics

DENISON hydraulic equipment
provides vital power for these...

NEW SHIPS

USS ENTERPRISE, CVA (N)-65, *first Navy nuclear-powered aircraft carrier... relies on Denison 20 Series hydraulic pumps for emergency steering gear operation. Jet blast deflectors incorporate numerous Denison hydraulic components.*

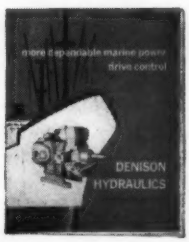


USS LONG BEACH, CG (N)-9, *nuclear cruiser uses a Denison 60 Series hydraulic pump and valves in the Talos missile handling system... 10 Series pump in the missile checkout equipment... and 60 Series pumps and motors to power the anchor windlasses.*

Both the nuclear-powered aircraft carrier *Enterprise,* and the nuclear cruiser *Long Beach* use dependable Denison hydraulic equipment for economical, responsive fluid power. This equipment has been specifically engineered and carefully manufactured for military and commercial marine application. Efficient and trouble-free, the full line of Denison hydraulic equipment—with capacities from 2 to 125 gpm and pressures to 5000 psi—can improve your marine hydraulic systems. Your nearby Denison Hydraulic Specialist can show you how. Call, write or wire for details now.

MARINE DESIGNERS/ ENGINEERS

Write for your free copy of Bulletin 202, "More Dependable Marine Hydraulic Power".



DENISON ENGINEERING DIVISION
American Brake Shoe Company
1284 Dublin Road • Columbus 16, Ohio

HYDRAULIC PRESSES
PUMPS • MOTORS • CONTROLS

DENISON
HYDRAULIC POWER

Monsanto **Space-Age Project "NEW MOLECULES"**

CHEMICAL EXPEDITIONS B

Monsanto's Special Projects Department...

mapping pathways to unique molecules that solve difficult military and industrial problems

Engineers in the rapidly expanding aerodynamic, electronic and mechanical sciences are hampered by having to accommodate their needs to conventional compounds that are "on hand." Monsanto recognized this problem as vital to defense and to industry, and three years ago established the Special Projects Department, a research facility largely devoted to study of scientific problems facing our government. This aptly named department is making significant advances toward solving a number of today's critical material needs.

Monsanto's Special Projects Department conducts research and development programs to produce special new materials to fit specific requirements. This laboratory focuses the scientific resources of a major chemical company on creating special molecules. Here, basic science and applied technology in organic, inorganic, polymer and petroleum chemistry are integrated in the creative expedition.

Available to the government and its prime contractors for contract research, the Monsanto Special Projects Department provides the maximum probability of ultimate success in developing chemical materials for space-age technology because the "know how" and research effort are concentrated in one well-rounded organization. It is currently at work in a number of vital areas of technology:

SOLID PROPELLANTS...

for the Bureau of Naval Weapons, exploring complete new types of solid propellants. As a creator, developer and producer of commercial chemicals, Monsanto's studies are directed at altogether new chemical systems of energy release for solid core rockets.

HULL-VIBRATION DAMPING...

for the Navy, Bureau of Ships, developing plastic coatings to damp vibration of metal parts. Study has developed a mathematical formula that relates actual engineering damping to fundamental constants of the polymers. Developed to date: a series of compounds that promise to be twice as effective as any previously known.

HIGH-HEAT-STABLE FLUORINE COMPOUNDS...

showing the most promise for use as high-temperature lubricants and fluids for the Air Force. By critical screening, Monsanto research has determined that perfluorobenzene appears to be a highly heat-stable building block. By screening various types of compounds, this order of heat stability was disclosed: certain compounds with fluorine and carbon only—stability greater than 1000°F.; special aromatics—up to 1000°F.; nitrogen heterocyclics—up to 950°F.; silicon compounds—to 900°F.; phosphorus compounds—to 850°F. Several major fields of fluorine chemistry have been "blocked out" and the research begun for heat-stable fluids and lubricants.

CONTROLLED-PERMEABILITY FILMS...

research for the Office of Saline Water on plastic sheeting that can rapidly pass water but retain the ions of dissolved salts. These films would have a controlled permeability based upon their molecular structure—in effect, hold promise for separating a variety of salts from solution and specifically for purifying sea water.

INORGANIC POLYMERS...

for the Air Force—investigating the bond strength of linkages between various combinations of nonmetals to find "plastics" composed of molecules with phosphorus-to-carbon-to-sulfur bonds; macromolecules with ionic bonding; nitrilic chlorides; cyano-fluorocarbons; and several types of metal-phosphorus-carbon linear polymers.

HEAT-RESISTANT ADHESIVES...

for the Air Force—polymers to develop high bond strengths between dissimilar materials at elevated temperatures. One series of polymers may yield metal-to-metal bonding that holds firm at 500-700°F., might be used to glue ovens together —and in many plants to eliminate welding.

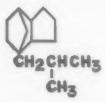
HIGH-TEMPERATURE LAMINATING RESINS...

for the Air Force—studies proceeding with a new series of resins that apply as easily as water to blotting paper, that catalytically cure at room temperature, and withstand exposure to temperatures of 500-700°F.

HYDROCARBON FUEL SYNTHESIS AND EVALUATION . . .

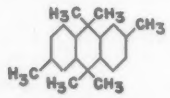
screening compounds for improved jet fuels. Under Air Force contract, some exotic and highly interesting fuel candidates have been prepared, including compounds with spirane linking, steric crowding, and cyclopropyl groupings. Some unusual candidate compounds never before prepared include:

5,5-dimethyl-4,6-methanospiro [2.5] octane



1-isobutyltricyclo [5.2.1.0^{2,6}] decane

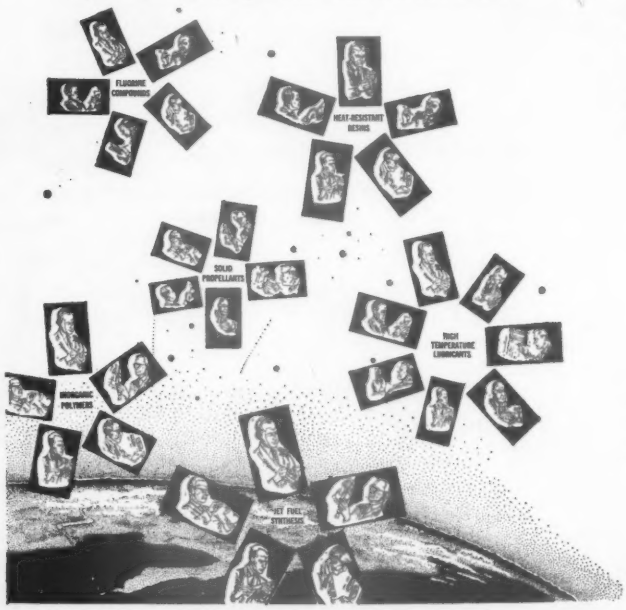
dispiro [5.0.5.1] tridecane



2,2,5,9,9,12-hexamethyltricyclo-[8.4.0.0^{3,8}] tetradecane

HIGH-TEMPERATURE LUBRICANT ADDITIVES . . .

for the Air Force—to provide extreme-pressure properties, pour-point modification, viscosity-index improvement, and oxidation resistance to synthetic lubricants that must operate in the temperature range of 600-800°F.



This simple apparatus was developed by Monsanto in collaboration with the WADD Materials Laboratory. In this simple refined form, it is essentially a modified Bodenstein gauge and is used to measure accurately the thermal stability of as little as 0.2 gram of liquid or solid up to above 1000° F.

In addition to the foregoing, Monsanto scientists are studying the chemistry of semiconductors, micro-metallic oxides, electroluminescents, fuel cells, molecular separation of helium, intra-metal thermocouples, radiation-resistant coolants and heat-transfer fluids.

SPECIAL MATERIALS FOR SPACE-AGE ENGINEERING...a chemical capability of Monsanto

Supersonic vehicles, guidance systems, satellites, data-transmission systems, solar batteries, early-warning networks—their rapid evolution has overrun the performance of existing materials. New materials—of many kinds—are urgently needed. These new materials start from new molecules, and Monsanto research chemists, whose professional *raison d'être* is creating new molecules, can help other scientists whose major interests are the finished items—not the stuff of which they are made or the numerous and complex "goops" essential for space-age hardware operation.

Monsanto's knowledge of synthesis of materials is a valuable adjunct available to specialists in many fields of advanced engineering. When your project requires a material with special properties, you are invited to discuss your needs with Monsanto. Write or call: MONSANTO CHEMICAL COMPANY, Department 02-B, C Building, St. Louis 66, Missouri.

For further details on Monsanto's capabilities in the field of special materials development, request a copy of bulletin RE-1: PEOPLE AND PROJECTS.

Monsanto

WESTINGHOUSE CAPABILITIES FOR DEFENSE

estinghouse Electric Corporation continues to make significant advances in computer science with the versatile new WDP-167 airborne digital computer. This computer performs 167,000 mathematical operations per second. Each operation includes two memory cycle times plus arithmetic execution time.

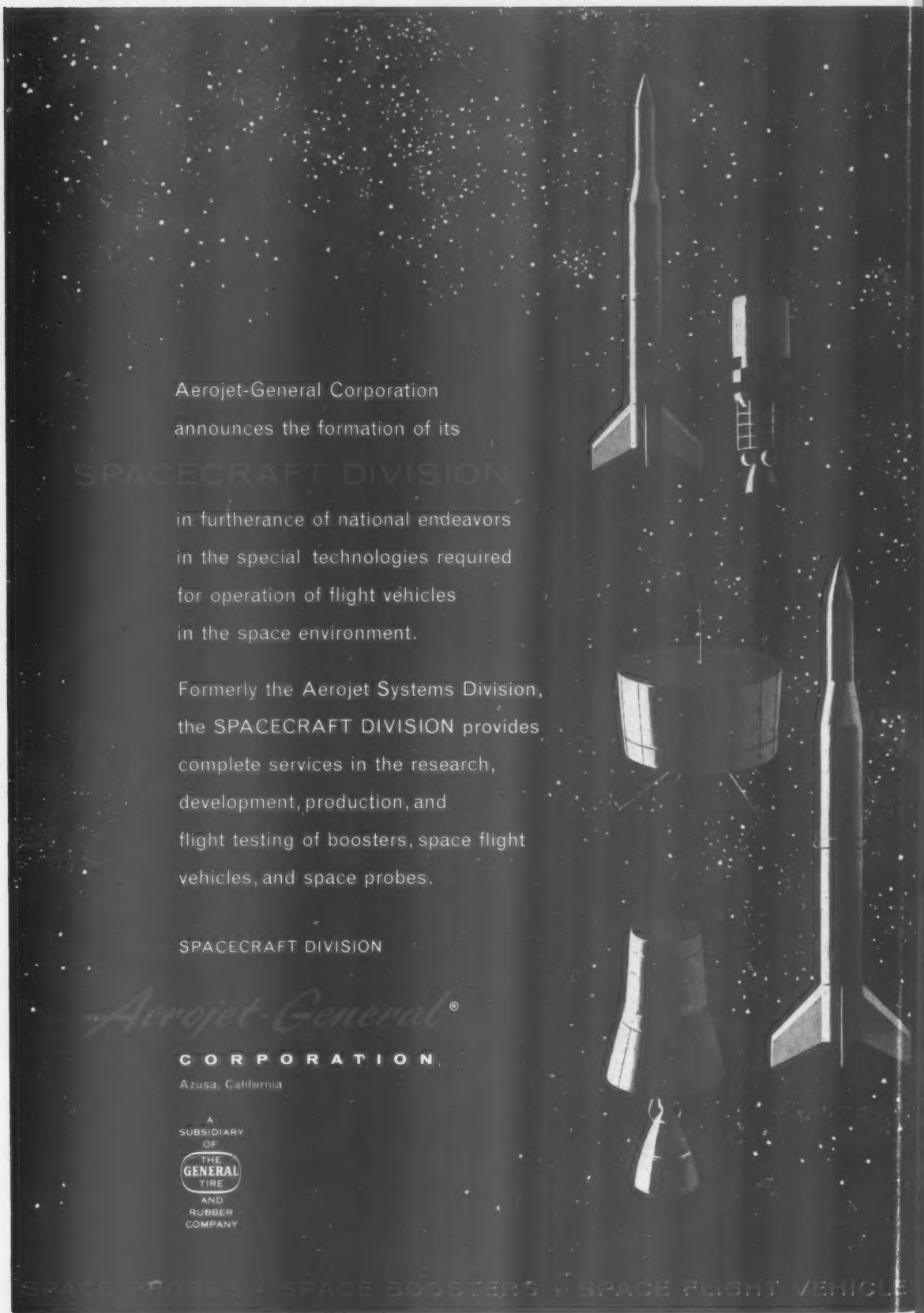
The surprisingly small WDP-400 computer, now in development, will perform 400,000 operations per second.

Both are general purpose computers for advanced applications in such fields as radar detection, defensive systems, space guidance, satellite tracking, missile and fire control.

Backed by years of experience in the military computer field, these developments at Air Arm Division are another important factor in Westinghouse capabilities for defense. *You can be sure . . . if it's Westinghouse.*

J-02323

Westinghouse


Aerojet-General Corporation
announces the formation of its
SPACECRAFT DIVISION
in furtherance of national endeavors
in the special technologies required
for operation of flight vehicles
in the space environment.
Formerly the Aerojet Systems Division,
the SPACECRAFT DIVISION provides
complete services in the research,
development, production, and
flight testing of boosters, space flight
vehicles, and space probes.
SPACECRAFT DIVISION
Aerojet-General®
CORPORATION
Azusa, California
A SUBSIDIARY OF THE GENERAL TIRE AND RUBBER COMPANY

Teletype manufactures for continuous performance

Continuous performance is traditional with Teletype message and data communications equipment. For example, a Teletype Model 28 printer—test-run on a round-the-clock basis at 100 words per minute—operated continuously, hour after hour, for a total of 500 hours, printed 9,000,000 words! At the end of this exhaustive test, the machine was still functioning smoothly and steadily.

In maintaining its tradition of quality, Teletype's manufacturing methods play a major role. Specialized machine tools, like the jig grinder shown above, selective heat-treating processes, electronic measuring devices—these are part of a manufacturing technique that insures consistent quality.

When you select Teletype equipment, you can be sure of dependable, trouble-free performance. Teletype Corporation manufactures this equipment for the Bell System and others who require the utmost reliability from their data communications systems.

Typing Tape Punch

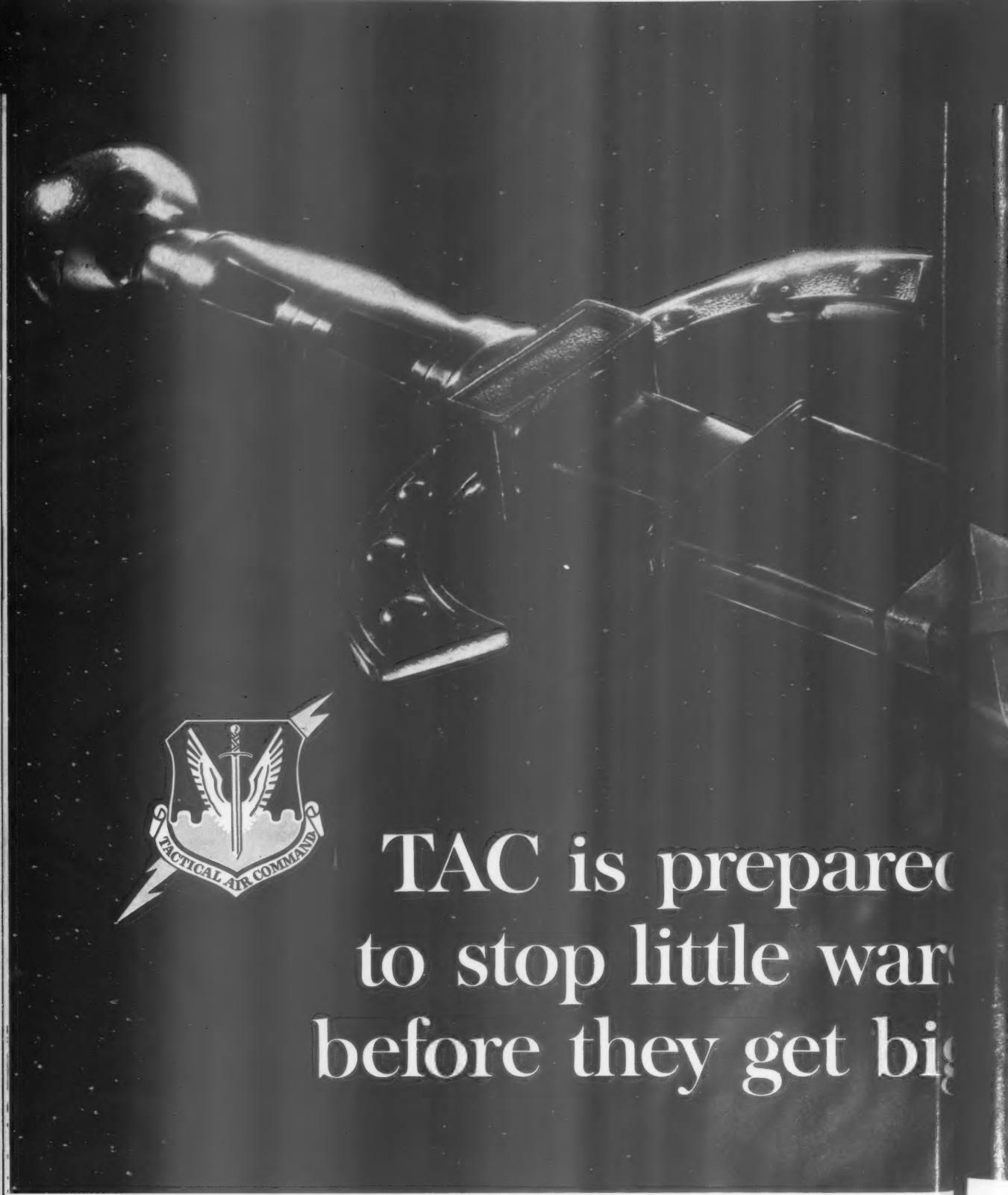
Tape Reader

Send-Receive Page Printer

Automatic Send-Receive Set

FREE Model 28 line folder. Write Dept. 74L, 5555 Touhy Avenue, Skokie, Illinois.

TELETYPE®
CORPORATION
SUBSIDIARY OF *Western Electric Company* INC.



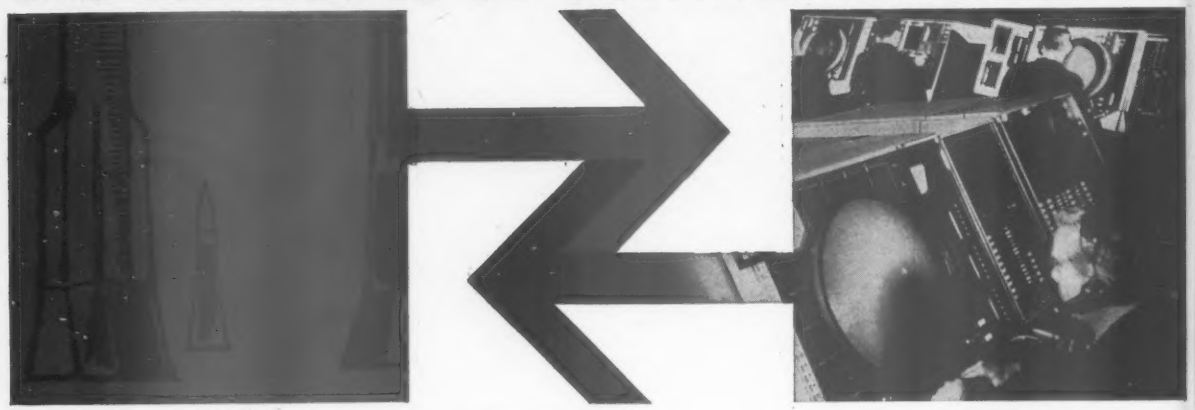
TAC is prepared to stop little wars before they get big

When trouble starts brewing, the Tactical Air Command can clamp the lid on localized aggression before it boils over and spreads to the rest of the world. TAC helps keep the peace in two main ways: (1) with its now famed CASF force which deploys quickly to any world trouble spot to work with local governments and provide air cover and attack strength as might be needed; (2) by establishing and maintaining a strong tactical airlift for Army strike forces, supplies, and support equipment.

The Lockheed/Georgia C-130 Hercules h served with TAC for more than 3 years—and has pro it meets all requirements for true airlift operati straight-in end loading; truck-bed height cargo flo air-conditioned pressurized cargo compartment; a ability to lift, land, or airdrop heavy, bulky pieces freight. And the C-130 can get closer to the acti operating to and from strips much too rough and sh for most cargo airplanes.
Lockheed Georgia Division, Marietta, Georgia.

LOCKHEED GEORGIA
WORLD HEADQUARTERS FOR AIRLIFTERS AND CARGOLOADERS

the elements of Command Control:



Data Acquisition and Application
The measure of any command control system is time. Success depends on how fast the system can close the loop between detected action and counter-action. Command control begins with data acquisition and ends with data application. Here, IBM's experience encompasses subsystems for the acquisition of information from distant and varied sensing devices, and for the presentation of refined data to commanders for military action.

Data Communication
High-speed networks that link command control computers require facilities to assemble and direct masses of data. Time is important. IBM data communication capabilities are evident in systems such as SABRE, a real-time activity control network; and INFORMER, a rugged, mobile field control center. These systems employ communication techniques involving real-time data channels, data conversion and message switching.

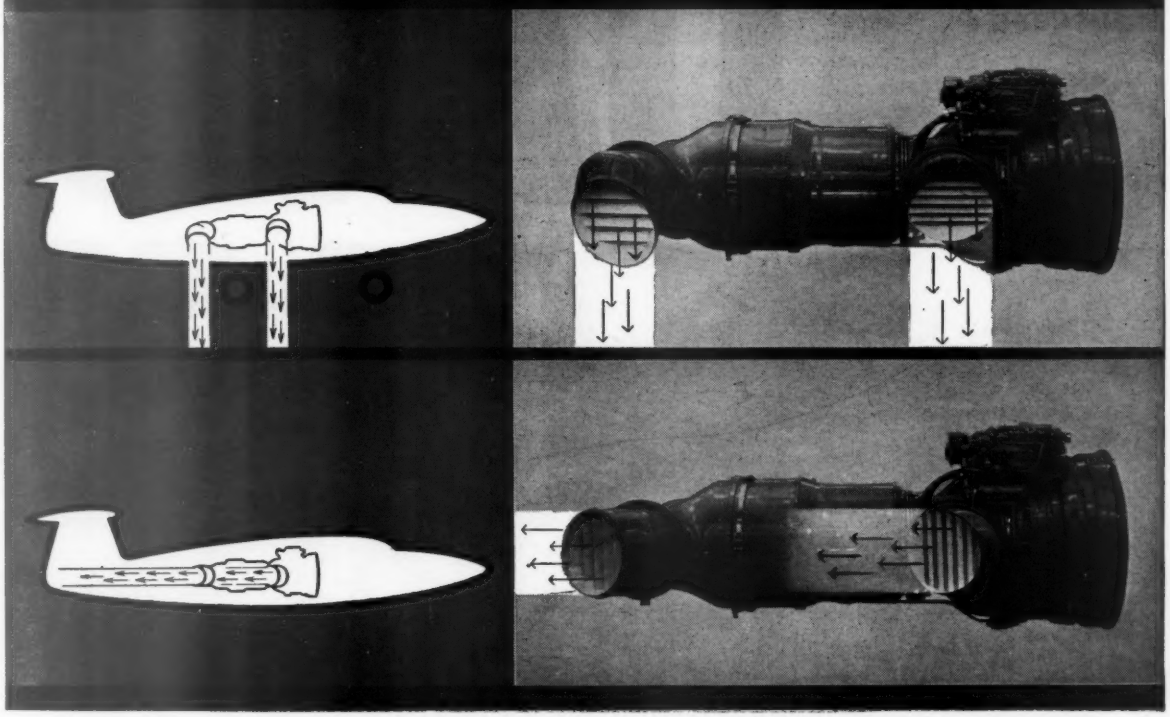
Data Processing and Control
Information must be quickly reduced and refined through computer processing to prepare it for command decision. Here again time is paramount. IBM has solved special data processing problems with standard systems such as the 709, installed for space vehicle orbit computations, and advanced systems such as the AN/FSQ 31V, in production for the Strategic Air Command Control System.

...all systems capabilities of IBM

IBM solutions to command control requirements range in scope from antisubmarine warfare studies to Air Force control systems like project 473L, and from the compact INFORMER to STRETCH, the world's largest computer. From study to implementation, IBM has proved its ability to solve the problem of time in all three elements of command control systems.

Federal Systems Division, 326 East Montgomery Avenue, Rockville, Maryland IBM

LIFT and THRUST from ONE ENGINE— the Revolutionary BS 53 Turbofan



...ANOTHER ENGINEERING ADVANCE BY BRISTOL SIDDELEY

The new Bristol Siddeley BS 53 high-ratio turbofan represents a major engineering breakthrough in the field of aircraft propulsion. Because the BS 53 can be fitted with movable nozzles evenly disposed around the centre of gravity which give directional control to its total thrust, this remarkably versatile engine provides the airframe designer with a *single power source for all conditions of flight.*

VTOL, STOL and normal take-off capability in the same aircraft. Suitable for subsonic or supersonic applications.

High cold-flow ratio gives high thrust for low weight, low fuel consumption and low noise level.

Conventional installation. Operational simplicity. Independent of all fixed ground installations.

Problems of ground erosion, recirculation and ingestion of debris reduced to a minimum.

The Bristol Siddeley BS 53 has already been selected for the Hawker P 1127 VTOL light strike fighter and is supported by the Mutual Weapons Development Programme for NATO.

For further information please write to:- Bristol Aero-Industries Limited, 200 International Aviation Building, Montreal 3, Canada, Tel: University 6-5471.

BRISTOL SIDDELEY ENGINES LIMITED

Will The Mission Succeed?

Ask . . .

DATS

(Dynamic Accuracy Test System)

Flight-line checkout by DATS (Dynamic Accuracy Test System) tells the interceptor commander whether his aircraft and weapon control systems are completely ready for a successful mission. As a result of field evaluation tests, showing the effectiveness of DATS in improving weapon control performance, RCA has been awarded an Air Force production contract. Developed by RCA's Airborne Systems Division, Defense Electronic Products, Camden, New Jersey, DATS is a new approach to the evaluation of system readiness.

It makes certain that only aircraft with properly operating weapon control systems are sent on missions. Based on a building-block design employing the highest reliability factors, a mechanical programming device and self-test capability, DATS utilizes a series of synthesized attack runs typical of mission conditions. DATS could be made applicable to many interceptor types of aircraft.

RCA®

The Most Trusted Name in Electronics

RADIO CORPORATION OF AMERICA

DEFENSE ORGANIZATION

The trend to unification . . .

UNPARALLELED dispersal, size and diversity of military operations account to a large extent for the unique administrative problems presented by Department of Defense.

Defense activities circle the globe. Substantial forces are assigned to Europe and the Far East. Mutual Defense Assistance Programs touch most of the countries of the free world. Close military relations have been established with our NATO allies, with our friends in the Middle East, Africa and Asia, with Australia and New Zealand, and with our Canadian and South American neighbors.

In dollars, the Department's annual expenditures, with Military Assistance spending included, are nearly $43 billion over half of all Federal expenditures.

Defense Secretary Gates

In terms of personnel, over 8.5-million people and their families are directly affected by Defense Department policies.

In terms of property, the Department has assets estimated to have cost the government about 150 billion dollars.

Besides size, diversity of activities creates serious management problems. The military departments perform every conceivable function. Besides recruiting, training, equipping and transporting military personnel, we must feed, clothe, house, pay, hospitalize, insure and bury them. Defense Department is the biggest purchaser in the United States and, next to the Department of the Interior, the largest real estate operator.

Added to these complexities is the $8-billion headache created each year by rapid obsolescence of equipment due primarily to the constant advances in military science. As new weapons enter our arsenal, not only are the old ones gradually discarded, but thousands of specialized items must be eliminated from our inventory.

Surplus items are constantly reviewed. Some go to other military services and government agencies—some to allies—some to classrooms—and finally, there is no alternative except "junk" (which, incidentally, returns 300 million dollars each year to the United States Government).

It is against this backdrop of management problems, then, that the Department of Defense organization has been designed.

Guidelines for managing Defense Department were set by the National Security Act of 1947, to which major amendments were added in 1949, 1953 and 1958.

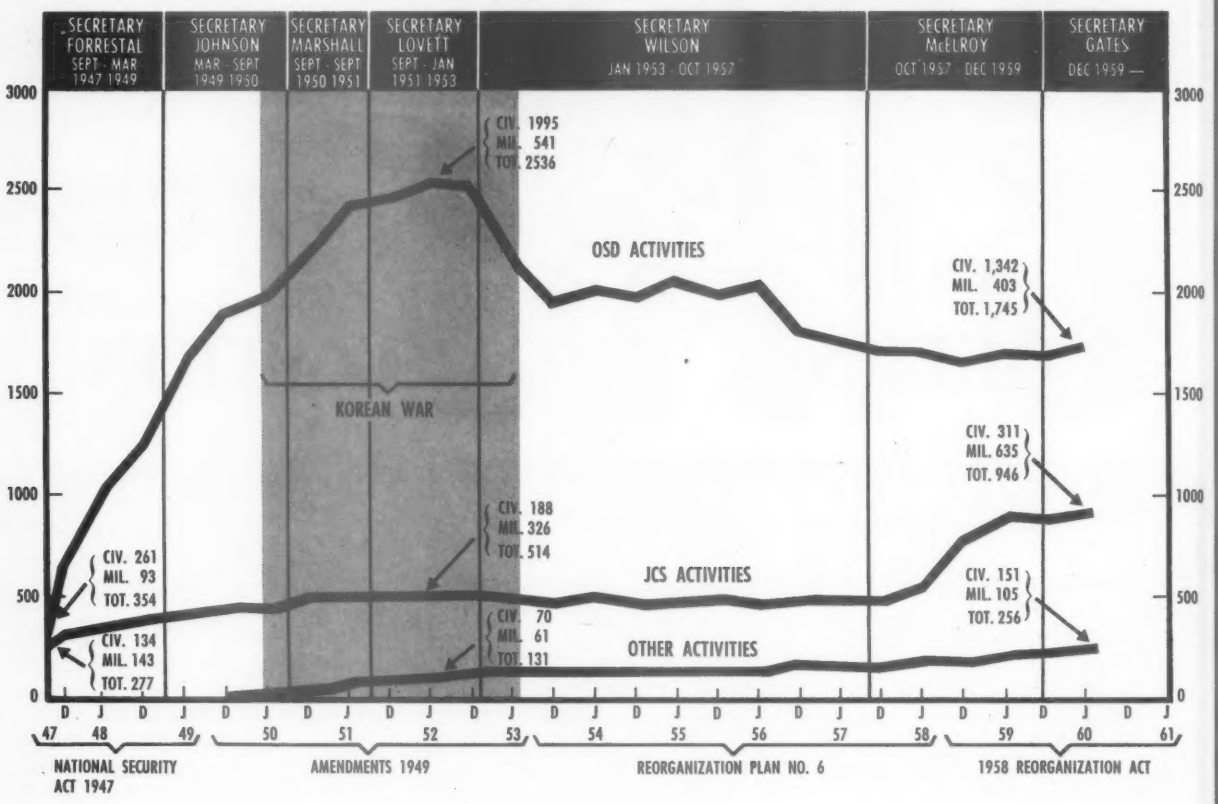
General trend of these statutory changes has been to clarify as much as possible the powers of the Secretary of Defense and to give him greater flexibility in his job.

The 1947 National Security Act established a Secretary of Defense who was essentially a coordinator—developing only general policies, primarily by persuasion, for Army, Navy and Air Force.

The original Act authorized only three Special Assistants to the Secretary of Defense and provided for continuing three well established agencies—the Research and Development Board, the Munitions Board and the Joint Chiefs of Staff.

The 1949 Amendments stressed that the Secretary of Defense was to be the principal assistant to the President in all matters relating to Defense Department. Army, Navy and Air Force lost their status as Executive Departments and became military departments. As such, they are something less than Executive Departments, but more than bureaus or Services within an independent Executive Department.

Employment Trend Creeping Upward . . .



The 1949 Amendments also authorized additional staff assistance for the Secretary of Defense—a Deputy Secretary, three Assistant Secretaries in lieu of the three Special Assistants, and a Chairman of the Joint Chiefs of Staff.

The Joint Staff was increased from 100 to 210 officers. A new Title IV was added to the Act, providing uniform budget and fiscal procedures throughout the Defense establishment.

Reorganization Plan No. 6 of 1953 gave greater management flexibility to the Secretary of Defense. The President's message transmitting the Plan to Congress made it clear that *no* function in the Department was to be carried out independent of the authority of the Secretary of Defense and that the Secretaries of the military departments were to be the "operating managers" for the Secretary of Defense.

Statutory boards and positions in the Office of the Secretary of Defense were abolished, and their functions transferred to the Secretary of Defense. Six more Assistant Secretaries, or a total of nine such positions, and a General Counsel were authorized, and the Chairman of the Joint Chiefs of Staff was given greater authority.

The Defense Reorganization Act of 1958 increased still further the responsibilities of the Secretary of Defense, particularly in operational direction of the armed forces and in research and development. The intent of the Congress in enacting the new law is probably best illustrated by the changes made in the Preamble to the National Security Act. The wording "to provide three military departments separately *administered*" was changed to read "to provide a *Department of Defense, including three military departments,*" and further provided that these were to be "separately *organized*" rather than "separately *administered.*"

The number of Assistant Secretaries was reduced from nine to seven, but a new position of Director of Defense Research and Engineering was established to supervise all activities in that area.

Under the 1958 Act, the basic organizational components of Defense are currently the following:

Office of the Secretary of Defense, including civilian advisors to the Secretary in special fields;

Joint Chiefs of Staff, his military staff advisors;

Army, Navy and Air Force, each with their civilian and military staffs responsible for providing, training, and equipping effective armed forces;

Unified and specified commands, in charge of operational forces assigned to a single command for the conduct of a Defense-wide military mission; and finally,

Other agencies Secretary of Defense establishes from time to time. Three such agencies have been set up to take care of technical programs requiring special handling:

(1) National Security Agency for intelligence services; (2) Defense Communications Agency for operational control and supervision of communications systems; and, (3) Defense Atomic Support Agency for military applications of atomic energy.

An operation as vast as the Department of Defense

can be effectively managed only by centralized policy formulation and decentralized operations.

Proper understanding of staff relationships in Defense involves knowledge of both organizational structure and derivation of administrative authority in the Department.

This authority is vested independently in the four top civilian officials of the Department. Secretary of Defense has this authority for all activities in the Department other than the military departments, and the Secretaries of Army, Navy and Air Force have it for their respective departments.

In other words, the Secretaries of the military departments derive their administrative authority *independent* of the Secretary of Defense—not by delegation *from* him. The exercise of these authorities, however, is subject to the direction, authority and control of the Secretary of Defense.

New joint agencies or activities are assigned whenever possible to one of the military departments for administrative support.

A major step toward breaking the hold this psychological administrative barrier had on the Department was taken with the 1958 Reorganization Act.

The Secretary determined that the Joint Chiefs of Staff should not be considered a component of the Office of the Secretary of Defense, and gave this organization status and identity as a separate major component of the Department.

Similar status was assigned to the unified or specified commands, which were made directly responsible to the President and the Secretary of Defense.

Despite these organization developments, all activities must still be fitted into the statutory quadri-partite administrative structure.

Joint Chiefs of Staff derive administrative authority from the Secretary of Defense. Similarly, each unified and specified commander and the agencies assigned to the military departments for support derive administrative authority from the Secretary of the military department that has been assigned support responsibility by the Secretary of Defense.

Changes Due

Having taken the organizational step, however, it should be possible in the future to adjust the administrative and management procedures in a manner to support the new organizational concept.

The most important fact, and one most often forgotten, is that Defense Department does not exist by itself, but is a part of the Executive Branch which itself is in a government of checks and balances—responsible to the people.

Final military plans and programs cannot be arrived at just within the Pentagon. Plans and programs are affected by the stresses and strains existing in the larger framework.

This fact is illustrated by the many duties assigned to the Secretary of Defense:

a. He is the principal assistant to the President in all Defense matters, meeting frequently with him to discuss special actions.

b. He represents the Department at weekly Cabinet meetings and is a member of various Cabinet committees.

c. He is a member of the National Security Council together with the President, the Vice President, the Secretary of State, and the Director of the Office of Civilian and Defense Mobilization.

d. The Secretary is a member of the President's Space Council, assisting in the development of basic policies guiding the Nation's research efforts for the conquest of outer space.

The Secretary is also the major representative of the Department of Defense in its relations with other Executive agencies, discussing major problems directly with the heads of these agencies.

To some degree, Defense programs involve activities of almost every one of the more than sixty executive departments and independent agencies of the government.

The Official Spokesman

Outside the Executive Branch, the Secretary represents the Department before Committees of the Senate and House during the consideration of major military bills or problems.

—He is the official Departmental spokesman to the American people on the activities of the armed forces.

—Finally, he represents the Department at periodic meetings of the NATO Defense Ministers and at other international meetings.

In carrying out their functions, the Secretary and his Deputy use for final review of major Defense policies the two top advisory groups of the Department:

Armed Forces Policy Council, where broad policies relating to the armed forces are considered at regular weekly meetings by the Secretary, his Deputy, Service Secretaries, Director of Defense Research and Engineering, Chairman of the Joint Chiefs, and military chiefs of the Services.

The Joint Secretaries, where matters concerning general management of the Department are considered by the Secretary of Defense, his Deputy, and Secretaries of the military departments.

Thus, advice of the "operating managers" of the Department of Defense—the Secretaries of the military departments—and of the chief military officers is brought to bear directly on the formulation of Defense plans, policies and programs.

It is the job of the military departments to provide, administer and support the operational forces required for our national security and to perform these tasks with economy and efficiency.

The Secretaries of the military departments are each authorized an Under Secretary and three Assistant Secretaries as principal civilian assistants.

The relationships of the Secretaries and their chief assistants to their military staffs are not uniform. Each Secretary has developed the type of relationship most suitable to his department.

In overall management of the Defense Department, the Secretaries of the military departments occupy *the* key places. They are responsible for the effective management of vast organizations and act, at the same time, as principal advisers of the Secretary of Defense in forming Defense policies and programs.

They are looked up by their subordinates as the major defenders of the interest of the military services and by the Secretary of Defense as his "operating managers."

They—like their chief military officers in their capacity

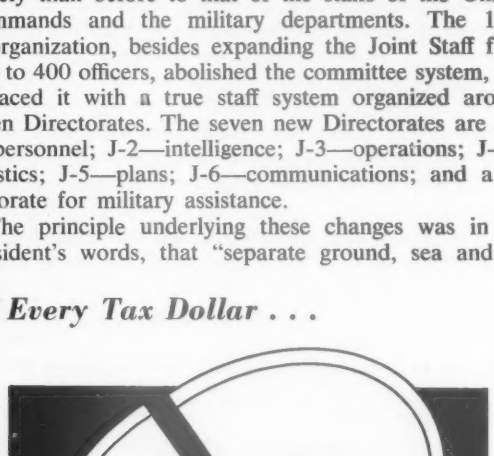
as members of the Joint Chiefs of Staff—represent the bridge between overall Defense requirements, determined within the framework of the national policies, and Service interests. This assignment has never been easy.

The Joint Chiefs of Staff hold a special position in the Department of Defense. They are the military advisors—not only to the Secretary—but also to the President and the National Security Council. Their duties are defined by law. Their members, except for the Chairman, are also the chief military officers in their respective departments.

Current organization of the Joint Staff aligns it more closely than before to that of the staffs of the Unified Commands and the military departments. The 1958 Reorganization, besides expanding the Joint Staff from 210 to 400 officers, abolished the committee system, and replaced it with a true staff system organized around seven Directorates. The seven new Directorates are J-1, or personnel; J-2—intelligence; J-3—operations; J-4—logistics; J-5—plans; J-6—communications; and a directorate for military assistance.

The principle underlying these changes was in the President's words, that "separate ground, sea and air warfare is gone forever." This means that our ground, sea, and air forces must operate as a team under single command—not separately.

Of Every Tax Dollar . . .



To meet this requirement a new streamlined chain of command was established running directly from the President and the Secretary of Defense *through* the Joint Chiefs of Staff to the eight unified and specified commanders.

Also, the unified commanders were given in 1958 "full operational command" over forces assigned to them. To prevent possible command conflicts, the statutory command authority of the chiefs of the military Services was abolished (where appropriate), and the unilateral withdrawal of forces from unified commands by a military department was prohibited.

Thus, under the Reorganization Act of 1958, unified and specified commands have been set up in Defense, responsible to the President and the Secretary of Defense for the military missions assigned through the Joint Chiefs of Staff—not through the military departments. These combatant commands are the cutting edge of our military machine—including the units which will do the actual fighting.

A unified command consists of the unified commander's headquarters staff and component commands for each of the military Services providing forces to the unified command.

Support of a unified command headquarters is assigned to one military department—normally the one which furnishes the commander.

Component commands and the forces assigned to the unified and specified commands continue to be provided, administered and supported by the military department. This is essential since we require forces organized, trained, and equipped on a *standard* basis so that they can be employed readily in *any* part of the world under *any* type of command.

A specified command is composed of forces from a single Service which has been assigned a Defense-wide military mission—such as the Air Force's Strategic Air Command.

With the new command structure we have come nearer to the President's objective of combat forces organized into truly unified commands—each equipped with the most efficient weapons systems that science can develop, singly led and prepared to fight as one, regardless of Service.

Expert civilian advice for the formulation of policy in particular functional areas is provided to the Secretary by the Office of the Secretary of Defense—organized around those areas that are of major importance to the efficient management of the Department of Defense.

The new Act placed special emphasis on the importance of the management of research and development activities in Defense. It made clear that in this field the Secretary's office may engage in operations as well as in policy determination.

In establishing the Director of Defense Research and Engineering, executive as well as staff functions were contemplated:

First, he acts as the principal advisor to the Secretary of Defense on scientific and technological matters;

Second, he supervises all research and engineering activities in the Department of Defense; and

Third, he directs all research and engineering activities that need centralized management.

The relationship of the Director's activities with those of other R&D activities in the Department of Defense can best be understood by examining some of the significant specific functions and authorities encompassed in the assignment "to supervise all research and engineering activities in the Department of Defense."

The emphasis is on *"all"* and it includes the research and engineering activities of the Army, Navy and Air Force, National Security Agency, Defense Atomic Support Agency, as well as those centrally managed in the Advanced Research Projects Agency.

It is the Director's responsibility to think about and plan for whole areas of technology—to see that our research and engineering programs are far-reaching and imaginative—move forward without unnecessary duplication, and represent an optimum integrated program to meet national military objectives.

To accomplish these objectives, the Secretary has delegated to the Director of Defense Research and Engineering the special authorities recommended in the Act and assigned him executive as well as staff functions.

1. He approves, modifies, or disapproves programs and

projects recommended or initiated by the military departments and other Defense agencies.

2. He initiates new projects to fill gaps in military R&D programs.

3. He recommends assignment or re-assignment among the military departments, ARPA and other DOD agencies of research and development responsibility for new weapons or weapon systems.

4. He directs and controls—including assignment or reassignment—research and development activities which the Secretary of Defense determines requires centralized management.

5. He engages in—or designates appropriate research and development facilities of the military departments or ARPA to engage in—basic and applied research projects by contract. He works alternately through one or more research and development facilities of the military departments, or direct by Defense personnel.

6. He recommends appropriate steps—including transfer, reassignment, abolition or consolidation of DOD functions—which will provide for more effective, efficient and economical administration and operation, will eliminate unnecessary duplication or will contribute to improved military preparedness.

The staff organization established to assist the Director in the performance of these functions provides for a two-way slice of the Department's research and development programs.

First, there is the traditional division into technical fields, such as aeronautics, electronics, fuels, materials and ordnance, where the principal emphasis is on the technology of specific items of equipment or subassemblies.

Second, there are Systems Directorates, which are concerned with weapon systems as a whole—their relationships one to another, and their technical capability to meet military needs. These Directorates at the present time cover air defense systems, tactical systems, strategic systems, intelligence collections systems, communications systems, and undersea warfare.

Supporting the Director in this effort, as well as the Joint Chiefs of Staff in connection with their planning responsibilities, is the Weapons Systems Evaluation Group which, through operational analysis, provides evaluations of present and proposed weapons and weapons systems and conducts actual field tests of certain weapons systems and their vulnerability to electronic countermeasures.

Besides the Director of Defense Research and Engineering, the 1958 Reorganization Act authorized seven Assistant Secretaries. The National Security Act prescribes that one of these Assistant Secretary positions be assigned to the Comptroller.

The remaining ones have been allocated by the Secretary to the fields of Health and Medical; International Security Affairs; Manpower, Personnel and Reserve; Properties and Installations; Public Affairs; and Supply and Logistics.

The statutory position of General Counsel, as chief legal officer of the Department of Defense, was already set in 1953.

To meet special management needs Assistants to the Secretary of Defense have been appointed. The statutory Chairman of the Military Liaison Committee operates in this capacity for his advisory functions on atomic energy. Similar positions have been set up for legislative affairs and intelligence.

Just as dramatic as the technological revolution in weapons has been the impact (on Free World Defense) of leadership in international affairs—which the United States has assumed since World War II.

The role of the Secretary of Defense in this field is largely working with the Secretary of State to reconcile military capabilities with political objectives, to participate with our allies in collective security arrangements, and to aid friendly nations to strengthen their military potential and reduce the burden on the United States.

Besides military staff advice in these matters provided by the Joint Chiefs of Staff, the Secretary of Defense is helped by the Assistant Secretary of Defense for International Security Affairs.

In foreign politico-military affairs—that is, working with the State Department in balancing our political objectives with our military capabilities—the job is largely one of planning and coordinating the development of Defense positions on a wide variety of subjects running the gamut from access to Berlin to the shelling of Quemoy.

Functional Breakdown . . .

Also, there is the task of assisting friendly nations to strengthen their own defenses. This is a program planning and administrative job. It involves for the most part equipping and training the military forces of those nations under the Military Assistance Program.

The Assistant Secretary of Defense for International Security Affairs also provides staff support to the Secretary of Defense in his role as a member of the National Security Council and the Operations Coordinating Board.

Thus, the principal role of the Assistant Secretary of Defense (ISA) is to assist the Secretary of Defense in integrating the military and non-military aspects of International Security Affairs.

The manpower and personnel job is to establish policies, which will contribute to the most effective and economical use of manpower resources available. The

need to maintain a relatively high readiness over an indefinite period and constantly increasing costs places new emphasis on the importance of efficient personnel management and a program to improve the selection, development and retention of the best qualified talent available to the Department of Defense.

The complexity of the task creates perhaps an even greater problem than its size. Besides the normal personnel management functions (selection, assignment, pay, promotion and utilization) are included such diversified activities as prisoner of war conduct, information and education, religious guidance, and the operation of post exchanges and commissaries.

In these circumstances, the degree of efficiency in personnel and manpower management determines to a large extent the overall efficiency of Departmental operations.

In financial management, the Secretary of Defense has had a statutory assistant since 1947. The Comptroller concept, as such, was not established until the enactment in 1949 of the Title IV Amendments to the National Security Act.

The Title IV Amendments prescribe that there shall be a Comptroller for the Department of Defense who shall be one of the Assistant Secretaries of Defense. It also prescribes that there shall be Comptrollers in each of the military departments.

The Assistant Secretary of Defense (Comptroller) duties are defined by law and his statutory authorities over budgets and fiscal matters are somewhat stronger than the authorities of other Assistant Secretaries of Defense. He has two principal functions:

(1) To supervise and direct the preparation and administration of the budget. And, (2) to establish and supervise the execution of accounting, reporting and internal audit policies and procedures.

More Efficient

The principal tools of financial management—such as program budgeting, cost accounting, working capital funds, and inventory controls—are being expanded as rapidly as possible. The objective is a financial system that will provide management at all levels with much of the information required to measure efficiency of performance, establish realistic pricetags for programs, introduce economy incentives, and—at the same time—satisfy the needs of the Congress to control appropriations and prevent over-expenditures.

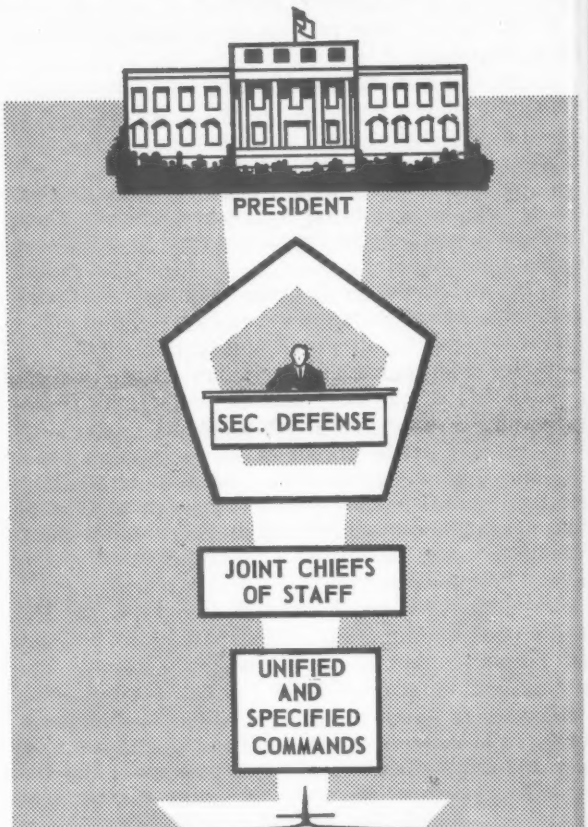
In the materiel field, the management of supply and service activities has been the subject of many controversies and debates since World War II. The key to the problem is the unparalleled expansion and reduction of supply requirements forced upon the military Services by world events, complicated by the increasingly rapid introduction of new weapons.

In military hard goods, total expenditures in 1935 were only $250-million. At the peak of World War II the value of delivery of hard goods was more than $53-billion—over 200 times the 1935 figure.

The supply system was not designed to handle such an expansion—the emphasis, therefore, was necessarily on speeding materiel through the bulging pipeline.

By 1947, the vacuum created by a rapid demobilization dropped hard goods deliveries to $2.1 billion, and war-time shortages turned into surpluses overnight. Then

DOD Chain-of-Command . . .



came Korea, and another $22.9 billion was pumped back into the hard goods supply system.

In these circumstances, progress in bringing about closer coordination of the several independent and sometimes competing and overlapping supply services of the military departments has been difficult. The Congress has called at various times for the establishment of a single, fully integrated supply system and the Hoover Commission advocated a single civilian-managed "Defense Supply Service Administration—a Fourth Service."

The Department, after a careful review of all recommendations, concluded that the goal could be more effectively reached, at the present time, within the existing organization. Replacing the Munitions Board by an Assistant Secretary of Defense (Supply and Logistics) has greatly eased coordination with the Assistant Secretaries in the military departments responsible for materiel and made possible more efficient supervision and operation.

Renewed emphasis was also given to the civilian review of requirements with central responsibility vested in the Under Secretaries of each of the military departments. Department-wide requirements are reviewd by

staffs in the offices of the Assistant Secretaries of Defense (Comptroller) and (Supply and Logistics).

Besides planning and reviewing materiel requirements, the Assistant Secretary of Defense (Supply and Logistics)

...Develops procurement policies and regulations

...Coordinates inventory management, storage, maintenance, distribution, and disposal

...Approves production schedules and

...Directs the supply cataloging, standardization and excess property screening programs of the Department.

Other responsibilities include transportation, communications, petroleum logistics and small business matters.

As in the supply management area, the more than $26-billion of real property assets present serious management problems.

Impact on Local Economies

Over $1.8 billion is spent annually for construction of all types. At the same time, obsolete or worn out facilities are placed on the surplus list for disposal.

Exchanging the old for the new, closing installations in one place and opening new ones in another is perhaps one of the most sensitive problems the Department has to handle, because of the impact on local economies.

To aid the Secretary of Defense in these matters, an Assistant Secretary of Defense has been assigned broad responsibilities, with special powers to exercise controls required by the Congress over military department actions.

These responsibilities include policy control over and planning for programs for the acquisition, construction, maintenance, utilization and disposal of military public works, family housing and reserve forces facilities.

While the principal management areas of men, money, materiel and installations encompass all Defense programs, the specialized problems concerned with maintaining standards of physical fitness, medical and dental care and the relationship of these matters to the civilian medical and dental professions has required special staff assistance to the Secretary of Defense since the early days of unification. In 1953 it was determined that the Secretary's principal advisor in this field should be an Assistant Secretary of Defense for Health and Medical.

His task is largely one of establishing uniform policies and standards, coordinating the activities of the Surgeons General and promoting close cooperation and mutual understanding between the Department of Defense and the civil health and medical professions.

The General Counsel of the Department of Defense is responsible for all legal services within and involving the entire Department of Defense.

As such, he is involved in such diversified activities as defending the Department against suits for patent infringement tax claims, violations of minimum wage standards and unfair labor practices. He investigates unauthorized disclosure of classified information, the handling of dismissals for security reasons and the adequacy of the security program to protect the Department against subversive activities.

These are but some of the wide range of Defense activities for which the General Counsel provides legal advice and assistance.

The Assistant Secretary of Defense in charge of the Department's public information and public relations activities holds one of the most sensitive and difficult positions in the Department.

There are those who allege that too much information is withheld from the public, while others contend that too much is handed out which aids potential enemies. Whatever course of action he takes, he is wrong on one count or the other.

The job of the Assistant Secretary of Defense (Public Affairs) covers both policy and administrative functions.

On the policy side, he has three principal functions:

First, he advises the Secretary of Defense and other top civilian and military officials on the public relations aspects of overall Defense policies.

Second, he coordinates the public information and public relations activities of the Department of Defense.

Third, he coordinates Defense public information matters with the White House and other government agencies—principally the State Department, the Atomic Energy Commission and the United States Information Agency.

His administrative functions are of two types—control functions and executive functions. In the control category, he is the approving authority for release of information by any Defense agency at the Seat of Government; for security and policy review of public statements, manuscripts and pictorial matters; and for military participation in public events.

His executive functions consist of managing and directing certain consolidated (OSD, Army, Navy and Air Force) public information and public relations services at the Seat of Government. These include the Pentagon press room and news service, accreditation of correspondents, radio, and television services, and still and motion picture services.

Line To The Hill

The job of maintaining effective relations with the Congress is perhaps, more important than public relations. Staff assistance to the Secretary of Defense in these matters is provided by an Assistant to the Secretary of Defense for Legislative Affairs. Each military department has a legislative and liaison office headed by an officer of two-star rank serving the Secretary and Chief of Staff of the Department.

To cut down "service rivalries" and to stop expenditures on "influence campaigns in which each Service claims superiority over the others and strives for increased appropriations or other Congressional favors," in April of 1958 the President asked the Secretary of Defense to:

1. Review numbers and activities of legislative liaison personnel in the military departments;
2. Strengthen Secretary of Defense supervision over these activities;
3. Transfer such personnel and activities as he deemed necessary to OSD; and
4. Designate a civilian Assistant Secretary of Defense to head up these activities in OSD.

Since the military departments continue to handle the major portion of the Department's legislative and Congressional business, it was determined, after careful review, that the transfer of legislative liaison personnel

and activities from the military departments to OSD would not work.

On the other hand, it was agreed that the Legislative Affairs Office in OSD should be strengthened and that the additional personnel required in OSD should be compensated for by decreases in personnel assigned to the legislative and liaison activities in the military departments

Further, it was determined that, for the time being at least, the OSD activity would be placed under an assistant to the Secretary in lieu of an Assistant Secretary of Defense.

Fields of Responsibility

In general, all of these officials, the advisors to the Secretary of Defense, perform similar functions in their assigned fields of responsibility:

1. They recommend policies and guidance governing Department of Defense planning and program development.

2. They develop systems and standards for the administration and management of approved plans and programs.

3. They review the programs of the military departments for carrying out approved policies.

4. They evaluate the administration and management by the military departments of approved policies and programs.

5. They recommend appropriate steps to provide more effective, efficient and economical administration and operation within the Department.

In his reorganization message to the Congress on April 3, 1958, the President stated: "I conceive of these Assistant Secretaries as having full staff functions; that is, they are empowered to give instructions appropriate to carrying out policies approved by the Secretary of Defense, subject at all times to the right of Service Secretaries to raise contested issues with the Secretary of Defense. This is the usual concept of the powers of principal staff assistants. It is essential to the work of the Assistant Secretaries of Defense."

Control Authority

In accord with these views and the 1958 Reorganization Act, the charters of the chief OSD officials were revised in early 1959 to provide that these officials, in the course of exercising full staff functions, have authority to:

Issue instructions and directive-type memoranda appropriate to carrying out Secretary of Defense policies; and

Obtain from other Department of Defense agencies whatever reports and information are necessary for the performance of their functions.

The 1958 Reorganization Act provides that "no Assistant Secretary of Defense shall have authority to issue orders to a military department unless (1) the Secretary of Defense has specifically delegated in writing to such an Assistant Secretary the authority to issue such order with respect to a specific subject area, and (2) such orders are issued through the Secretary of such military department or his designee."

Specific delegations of authority required by the statute are incorporated in each of the new charters for the Assistant Secretaries of Defense. Thus the command channel from the Secretary of Defense to the Secretaries of the military departments is not circumvented in the formal communication of instructions to the military departments by the Secretary's staff.

Ordinarily, only the Secretary of Defense may place a request on the Joint Chiefs of Staff which requires action *by the Chiefs themselves*. In other words, informal OSD staff to Joint Staff coordination and cooperation is encouraged, but if the formal views of the Joint Chiefs are required, then the Secretary of Defense will request them.

Exceptions to this procedure have been specifically authorized in the case of the Assistant Secretary of Defense (ISA) on politico-military affairs, the Assistant to the Secretary of Defense on atomic energy matters and the Assistant for Special Operations on intelligence matters.

The authorized channel for communicating with Unified and Specified Commanders is from the Secretary of Defense through the Joint Chiefs of Staff or from the Joint Chiefs of Staff by direction of the Secretary of Defense.

Two Exceptions

Two exceptions to this procedure have been authorized—one for public information and the other for military assistance matters. In each of those areas the Assistant Secretary of Defense concerned is authorized to communicate directly with unified and specified commanders after coordinating with JCS.

In the case of public information, this special arrangement appears desirable in order to protect the Chiefs, insofar as possible, from becoming embroiled in political considerations. The military assistance exception is necessary in view of the direct supervisory relationship of the Assistant Secretary of Defense (ISA) to the military assistance advisory groups in the Unified Commands.

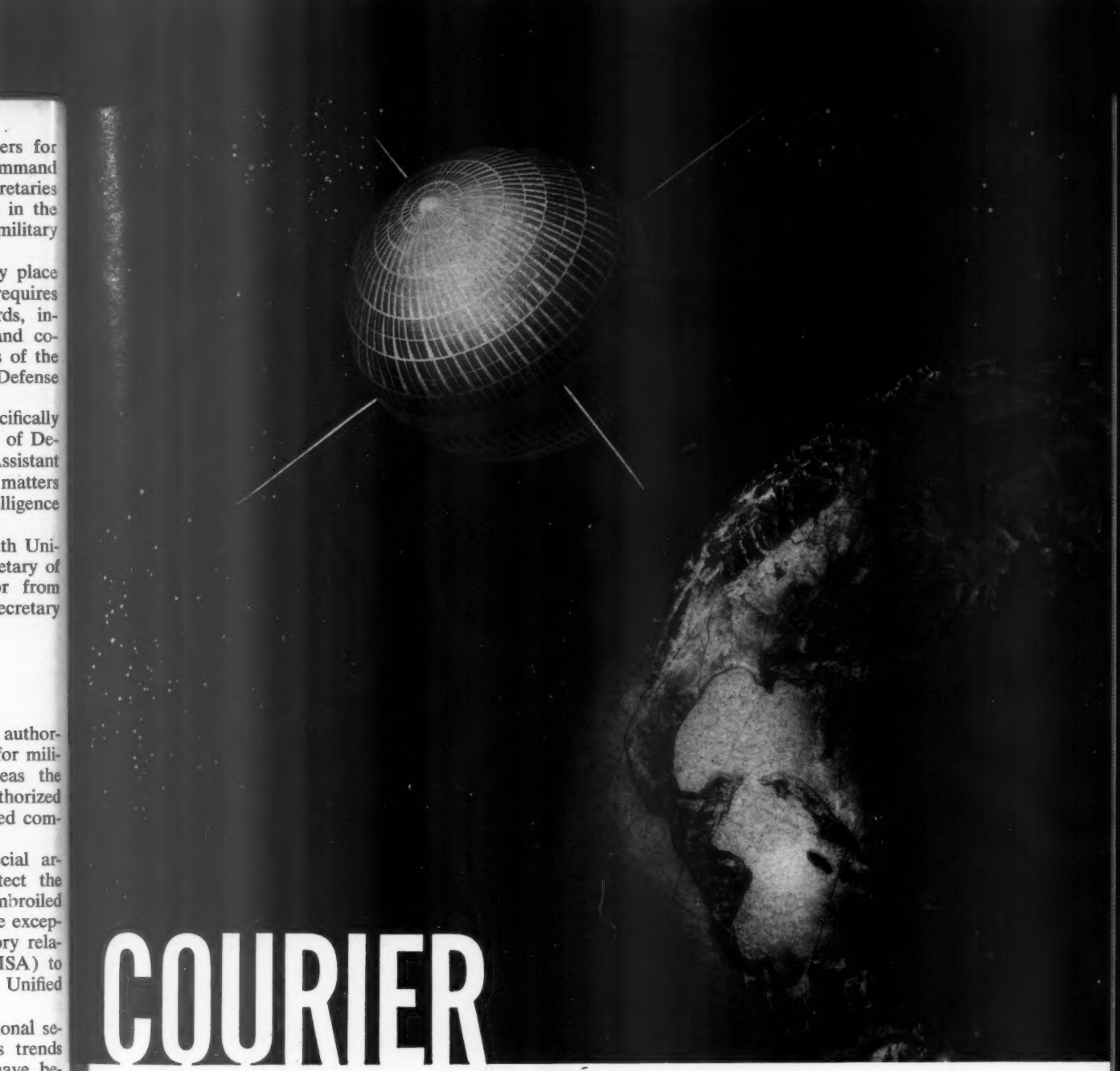
In summary, the present organization for national security, developed since World War II, reflects trends that became evident during that conflict and have become increasingly so since that time:

First, the requirement for close integration of foreign, domestic, and military policies, as success—not only in a shooting war but also in the cold war—became more and more dependent on the effective coordination of all our national policies.

And secondly, the requirements for efficient integration of the military Services, in Washington as well as in the field—as the increasingly rapid scientific revolution of our age not only multiplied many times the cost of effective defense but also extended the overlap in the combat capabilities of the various military Services.

The current organization represents a step-by-step evolutionary adjustment to these two requirements.

In these circumstances, the efficiency of the organization depends primarily on the extent to which the Secretary's principal assistants—the Secretaries of military departments, the Joint Chiefs of Staff, and the chief OSD officials—are able to fulfill the staff requirements of the Secretary of Defense. ■



COURIER

the world's first communications satellite . . . designed and built by Philco

■ Project Courier is the first step in a revolutionary new concept of communications which will lead to a world-wide system of message-relaying, globe-circling satellites in outer space. Philco was chosen by the U. S. Army Signal Corps to design and produce the complex communications equipment in the Courier satellite.

Extensive experience in earth satellite electronics . . . utilizing high frequency transistor circuitry, in RF techniques, in miniaturization and reliability in space environment, lie behind Philco's selection for this vitally important project being conducted at Philco's Western Development Laboratories.

Courier represents one of man's greatest efforts in his attempt to conquer outer space . . . and another important Philco achievement in the aerospace age. For capacity, facilities and experience in advanced electronics systems, look to the leader . . . look to Philco.

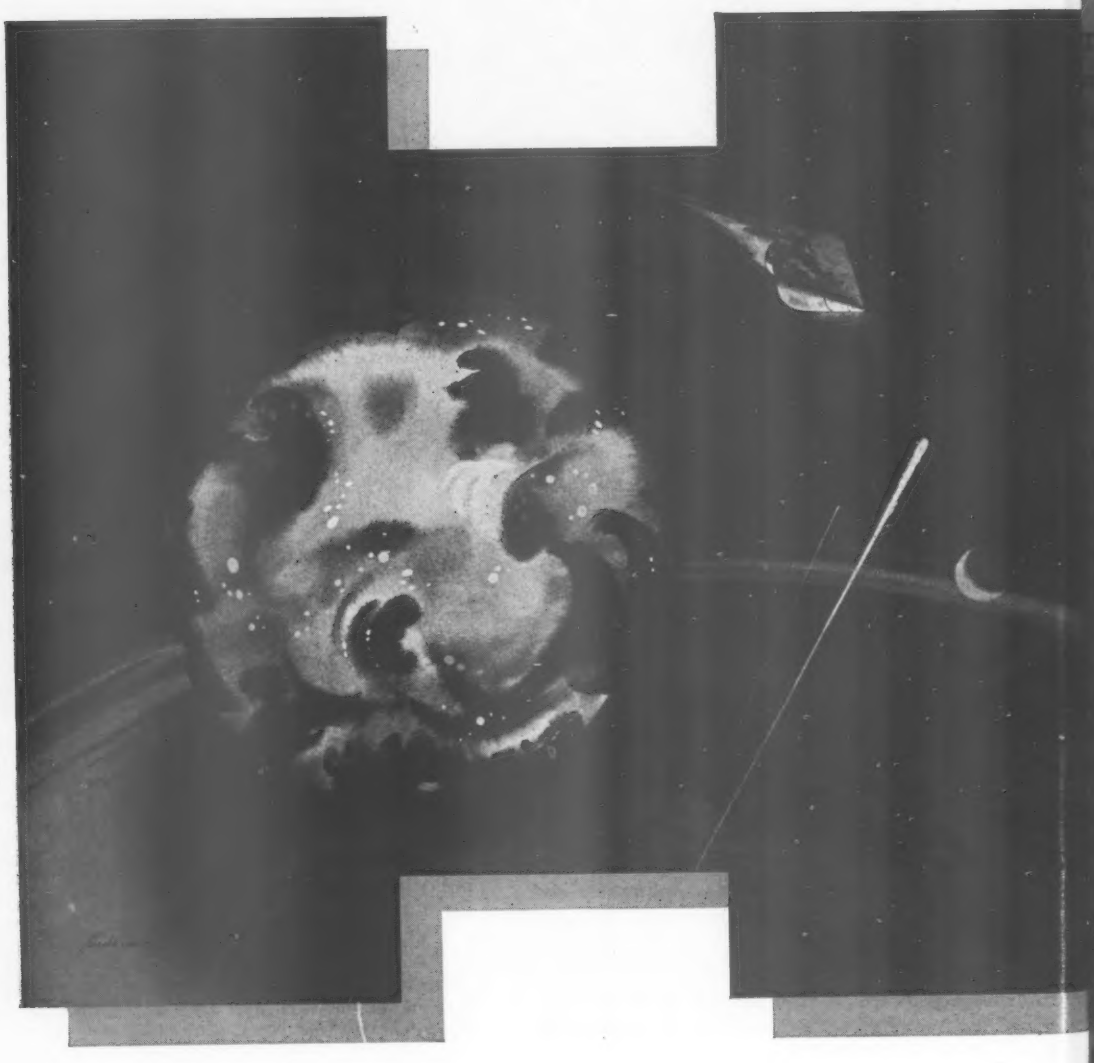
Government and Industrial Group, Philadelphia 44, Pennsylvania

PHILCO®

Famous for Quality the World Over

Communications and Weapons Division • Communications Systems Division
Computer Division • Sierra Electronic Division • Western Development Laboratories

Ballistic missiles: the ultimat



...weapon?

...he ICBM is often called the "ulti-...ate weapon." Yet, throughout ...story, there have been many so-...lled ultimate weapons. A defense ...s always been found.

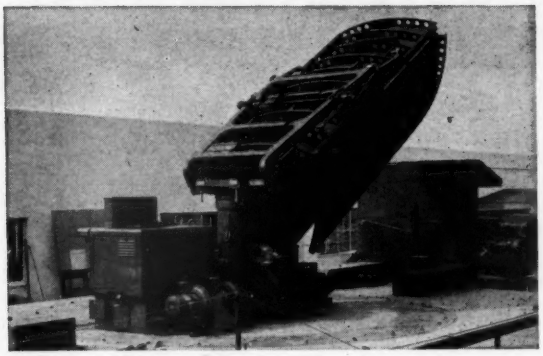
...day, Hughes engineers are studying this de-...se problem. Drawing on Hughes' past experi-...ce in the development of highly successful ...ercept systems, they are uniquely qualified to ...et this challenge.

...e high order of complexity in ballistic missile ...erception means that all of the traditional ...as involved—early detection, discrimination, ...uisition, tracking, data processing, intercept ...l kill—must be expanded to new highs in the ...te of the art.

...tremendous help are the lessons learned dur-... the development of the first successful air-...ne electronics intercept system—made up of ... Hughes Electronic Armament System and ...ghes Falcon air-to-air-guided missiles.

...ghes is also drawing on its skills in such fields ...dvanced infrared and radar detection sys-...s, satellite communications systems, elec-...nic scanning radar systems, space vehicle ...hnology, microwave propagation, advanced ...a handling and display systems, and other ...ds of advanced electronics.

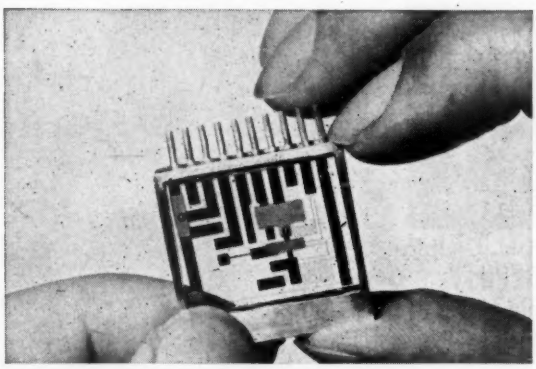
...ghes Anti-ICBM work will be coordinated to ...bine the efforts of virtually every Hughes ac-...ty. In this way, every conceivable idea can be ...died—and the entire spectrum of electronics ...adened.



This Hughes three dimensional radar antenna, *shown in the process of retraction, is completely mobile. Working with mobile data processing systems, this antenna provides umbrellalike protection for key defense areas.*

Foresight and imagination, plus tested and proven management capability — these are the factors responsible for the success of Hughes systems.

For further information — particularly about Hughes' capabilities in the Anti-ICBM area — please write: Hughes Advanced Program Development, Marketing Department, Hughes Airborne Systems, Culver City, California.



This complete flip-flop circuit *demonstrates Hughes' capabilities in the field of solid state data processors. To broaden the state of the Anti-ICBM art, Hughes is drawing upon a great number of advanced electronic techniques such as this.*

Creating a new world with ELECTRONICS

HUGHES

HUGHES AIRCRAFT COMPANY
Culver City, El Segundo, Fullerton, Newport Beach, Malibu, Oceanside, Santa Barbara and Los Angeles, California; Tucson, Arizona

DEPARTMENT OF DEFENSE

ASSISTANT SECRETARIES OF DEFENSE

J. Vincent Burke
GENERAL COUNSEL

Perkins McGuire
SUPPLY & LOGISTICS

John Irwin
INTERNATIONAL SECURITY AFFAIRS

ASSISTANTS TO THE SECRETARY

Herbert B. Loper
ATOMIC ENERGY

Lt. Gen. G. B. Erskine
SPECIAL OPERATIONS

Brig. Gen. J. D. Hittle
LEGISLATIVE AFFAIRS

Thomas Gates
SECRETARY OF DEFENSE

James H. Douglas
DEPUTY SECRETARY OF DEFENSE

JOINT CHIEFS OF STAFF

Gen. George H. Decker

Gen. Lyman Lemnitzer, Chairman

Gen. Thomas D. White

ARMED FORCES POLICY COUNCIL

Secretary of Defense, Chairman; Deputy Secretary of Defense; Secretaries, Military Departments; Chiefs of Staff, Army & Air Force; Chief of Naval Operations.

JOINT SECRETARIES

Secretary of Detense, Chairman; Deputy Secretary of Defense; Secretaries, Military Departments; Undersecretaries, Military Departments; Asst. Secretary of Defense, (ISA).

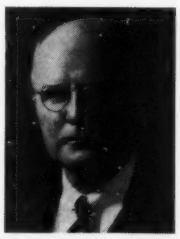
Floyd Bryant
PROPERTIES AND INSTALLATIONS

Charles Finucane
MANPOWER, PERSONNEL & RESERVE

Herbert York, Director
DEFENSE RESEARCH AND ENGINEERING

Murray Snyder
PUBLIC AFFAIRS

Franklin B. Lincoln
COMPTROLLER



Frank B. Berry
HEALTH AND MEDICAL

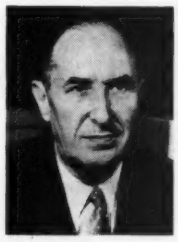
Adm. Arleigh Burke

THE JOINT STAFF

Gen. David Shoup

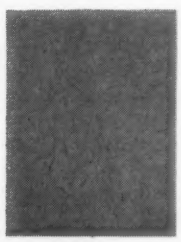
- ALASKAN COMMAND
- ATLANTIC COMMAND
- CARIBBEAN COMMAND
- CONTINENTAL AIR DEFENSE COMMAND
- EASTERN ATLANTIC AND MEDITERRANEAN COMMAND
- EUROPEAN COMMAND
- PACIFIC COMMAND
- STRATEGIC AIR COMMAND

Wilber Brucker
SECRETARY OF THE ARMY



William B. Franke
SECRETARY OF THE NAVY

Dudley C. Sharp
SECRETARY OF THE AIR FORCE



NATIONAL SECURITY AGENCY

FEW PEOPLE familiar with the man or his background were surprised when General Lyman L. Lemnitzer moved from the top job in the Army to take over the nation's highest military post—as Chairman of the Joint Chiefs of Staff.

Having excelled in just about everything from marksmanship to diplomatic negotiations in his 40-year Army career, it is a safe bet that Lemnitzer will excel in his new duty as well.

Unquestionably, the job is one where excellence will be called for. If chairman of the JCS has been a tough task in the past, it can only get tougher in the future. One big reason: Much more precedence will be heaped upon Gen. Lemnitzer. He is taking over at a time when the President's plans for Service unification are going into full swing.

Now operating under this unification program is the newly organized Strategic Target Planning program and the Defense Communications Agency. (Defense Communications System is slated to be operational by March 1961.)

While these programs will make the JCS job more effective, they will step up the responsibilities of the JCS Chairman—who is responsible to the Secretary of Defense for their operation.

The responsibility of maintaining maximum national security falls indirectly upon the JCS and as chairman, Gen. Lemnitzer's position is one that assures this will be carried out.

To explain how the Armed Forces are working to provide maximum national security, Lemnitzer breaks their task down into its component elements —which are the seven requirements that have to be met. They are:

First, to retaliate with instant and destructive air-delivered blows at targets deep in enemy territory.

Second, to maintain defenses against air and missile attack on important military, communications, and industrial objectives here in the Continental United States.

Third, to react promptly and effectively in direct resistance to enemy armed forces involved in military aggression.

Next, to provide strong, mobile reserves.

Another—and closely related—is the capability for protecting the sea and air lanes between the Continental U.S. and strategic overseas areas, in order to prevent an enemy from interfering with reinforcements and supplies.

Sixth, is the ability to carry out rapid expansion of our military forces in time of emergency.

Seventh and final is the need to help other nations of the Free World in developing their own military strength.

Of these seven basic requirements, Gen. Lemnitzer says "Each element of our total effort depends upon and is strengthened by the other elements . . . and involves the direct participation of at least two and generally all of the Armed Forces."

Chairman of the Joint Chiefs of Staff, Gen. Lyman L. Lemnitzer

"Combining would not stop differences."

Although a veteran of more than 40 years in the Army, Lemnitzer has made it clear to the Senate Armed Services Committee that he would not follow the Army line in his new role as Joint Chiefs of Staff Chairman.

In August hearings, held to consider Lemnitzer's nomination to his present post, he said as Chief of the Army Staff, and throughout his Army service, he has been an ardent advocate of the importance of the Army's mission, and still feels that way today. But as Chairman of the Joint Chiefs of Staff, he would not advocate any one service position over any other service position.

Gen. Lemnitzer began building a firm reputation as a thorough and imaginative planner early in his career.

With World War II expansion of the Army in 1941, he was assigned to the War Plans Division of the War Department General Staff. During succeeding months he worked with General Headquarters, U.S. Army and Headquarters, Army Ground Forces.

Later in the war, he took part in the planning for mobilization and training of the huge wartime Army and for the projected landings in North Africa. Significantly, this was an operation involving all branches of the Service—Army, Navy and Air Corps.

Following World War II, he headed the U.S. delegation to the Military Committee of the Five (Brussels Pact) Powers in London, helping to pave the way for the North Atlantic Treaty Organization. He also helped present the NATO Treaty to the Senate for ratification.

On the strength of his broad experience as a military diplomat, he was named the first Director of the Office of Military Assistance. In this job he

played a key role in setting up the military assistance program, today a major element in the free world's security activities.

An Academy man (Class of '20), Lemnitzer has seen many changes in the defense forces of the U.S. since his first duty assignment at the 10th Coast Artillery Regiment at Fort Adams, R.I. He probably will see more—and have a hand in making them effective.

Says the new JCS Chairman, "I have advocated a greater emphasis on the ability to wage limited war and I believe that shift of emphasis is now taking place in actions and programs that were started some time ago . . . but there is nothing static in this field. We are going through a very important transition in the balance between manned bombers and missiles particularly in the large missile field."

Besides his reputation as a thorough and imaginative planner, an able negotiator and military diplomat, Gen. Lemnitzer also has an excellent combat record.

In 1950, at the age of 51, he qualified as a parachutist and assumed command of the 11th Airborne Division at Fort Campbell, Ky. A year later he went to Korea, commanding the 7th Infantry Division in the Battles of Heartbreak Ridge, the Punch Bowl, and Mundung-ni Valley, and in the fighting in the Chorwon Valley.

For his part of the war in Korea, he won the Silver Star for conspicuous gallantry. This is only one of the 22 decorations and citations he holds.

Not one to be held down, or to follow in the footsteps of those before him, he has made it plain that the service chiefs, if they have a difference of opinion, will have an open gangway to the Secretary of Defense or, if necessary, to the President.

"Very Necessary"

Before, when a situation like this arose, it was presented to the Secretary of Defense or the President by the Chairman. Questioned by Senator Prescott Bush (R., Conn.) on whether or not he thought his method appropriate, Gen. Lemnitzer replied, "I think it is not only appropriate, I think it is very necessary . . . I much prefer, and I heartily endorse, the presentation of views at this level by the military head of the service himself."

When asked about his conception of the JCS Chairman's job, Lemnitzer defined it this way: (1) He is the manager, the executive of the Joint Chiefs of Staff organization, including the Joint Chiefs themselves and the Joint Staff. (2) He sees to it that the administrative matters of the Joint Chiefs of Staff are handled quickly and effectively.

Also, (3) He presides over the meetings of the Joint Chiefs of Staff. And, (4) is an advisor to both the Secretary of Defense and the President.

Asked if he had any recommendations for changes in the Reorganization Act of 1958, Lemnitzer said he had no immediate plans.

But, he added, based upon the experience that he will gain, if he sees areas where operations might be improved, or the responsiveness of forces might be stepped up, he would not hesitate to make such recommendations.

Born in Honesdale, Pa., on August 29, 1899, Lemnitzer graduated from Honesdale high school in June 1917, entered the U.S. Military Academy the following year, graduating in 1920.

A Colorful Career

His assignments from that time until the outbreak of World War II alternated between troop duty and service schools, both as student and instructor.

A tour of duty in Washington with the War Plans Division of the War Department General Staff followed at the outbreak of World War II. He next took command of the 34th Anti-aircraft Artillery Brigade in England. Then, his intimate familarity with plans for the forthcoming North African operation led to assignment to General Eisenhower's Allied Force Headquarters.

Here, while retaining command of his brigade, he was designated Assistant Chief of Staff for Plans and Operations, charged with directing final, detailed preparations for landings and the operations in North Africa.

After a brief return to England, Lemnitzer moved to North Africa as a member of Eisenhower's staff. In January, 1943, he was assigned as deputy chief of staff to Gen. Mark Clark in Morocco during the early phases of the organization of 5th Army.

Resuming active command of his brigade in late February 1943, he led it through the Tunisian campaign and the early phases of the Sicilian campaign.

Following the war, Lemnitzer was named senior Army member of the Joint Strategic Survey Committee of the Joint Chiefs of Staff, in Washington. He next became Deputy Commandant of the National War College, playing a key part in establishing that Agency at the highest level of joint military education.

He returned to the U.S. from Korea in 1952 to assume the post of Army Deputy Chief of Staff for Plans and Research.

Returning to the Far East in March 1955, he assumed command of U.S. Army Forces, Far East and the 8th Army. Shortly thereafter, he was named Commander in Chief of the United Nations and Far East Commands and Governor of the Ryukyu Islands.

In July 1957 he became Army's Vice Chief of Staff and in March, 1959, was named to succeed Gen. Maxwell D. Taylor as Army Chief of Staff, taking over the new duties on July 1, 1959.

He is married to the former Katherine Mead Tryon of Honesdale, Pa. They have two children, Lois Katherine, wife of Capt. Henry E. Simpson, USA, and Capt. William L. Lemnitzer, USA.

The General's free hours are spent with golf, fishing, photography and corresponding with friends around the world. However, as with most high level Pentagon officials, his growing list of new duties, and longer office hours have placed tight restrictions on his devoting much time in the future to any of these.

It has been advocated that a single Chief of Staff, or even a single military Service, would be more desirable than the present Joint Chiefs of Staff system which, supposedly, is unwieldy and lacking in unity.

Requires Blending

Regarding this, Gen. Lemnitzer states that "each of the major military fields has grown so complex that no one man can hope to master more than one of them. Thus, whether we follow the traditional categories of land, sea, and air, or adopt some other method of classification, some delineation according to functions is inevitable.

"Given a definite limit on available funds, there is bound to be competition between the functional categories. Combining everyone into one Service would not eliminate differences of view. It would merely submerge them under a deceptive appearance of unanimity.

"This has a bearing on the validity of the concept of a single Chief of Staff. Military questions are not simple, black-and-white matters. Their solution requires a blending of all pertinent considerations and views. Our present system assures such a blending.

"Furthermore, the fact that the members of the Joint Chiefs of Staff are also the Chiefs of Staff of their respective Services, and thus responsible for carrying out the tasks resulting from Joint Chiefs of Staff recommendations, assures a realistic and workable approach in deciding on those recommendations. In brief, our present system is working. I feel that the present system should have time to prove itself." ■

DEPARTMENT OF THE ARMY

SECRETARY OF THE ARMY
Wilbur Brucker

CHIEF OF LEGISLATIVE LIAISON
Maj. Gen. R. L. Vittrup

GENERAL COUNSEL
Frank G. Millard

UNDER SECRETARY OF THE ARMY
Hugh M. Milton II

ADMINISTRATIVE ASSISTANT
R. H. Willey

CHIEF OF PUBLIC INFORMATION
Maj. Gen. W. W. Quinn

ASSISTANT SECRETARIES OF THE ARMY

FINANCIAL MANAGEMENT
George H. Roderick

DIRECTOR OF RESEARCH & DEVELOPMENT
Richard S. Morse

MANPOWER, PERSONNEL & RESERVE FORCES
Dewey Short

LOGISTICS
Courtney Johnson

CHIEF OF STAFF
Gen. George Decker

VICE CHIEF OF STAFF
Gen. Clyde D. Eddleman

SECRETARY OF THE GENERAL STAFF
Brig. Gen. J. T. Throckmorton

THE JUDGE ADVOCATE GENERAL
Maj. Gen. G. W. Hickman, Jr.

ASSISTANT CHIEF OF STAFF, INTELLIGENCE
Maj. Gen. J. M. Willems

ASSISTANT CHIEF OF STAFF FOR RESERVE COMPONENTS
Maj. Gen. J. W. Bowen

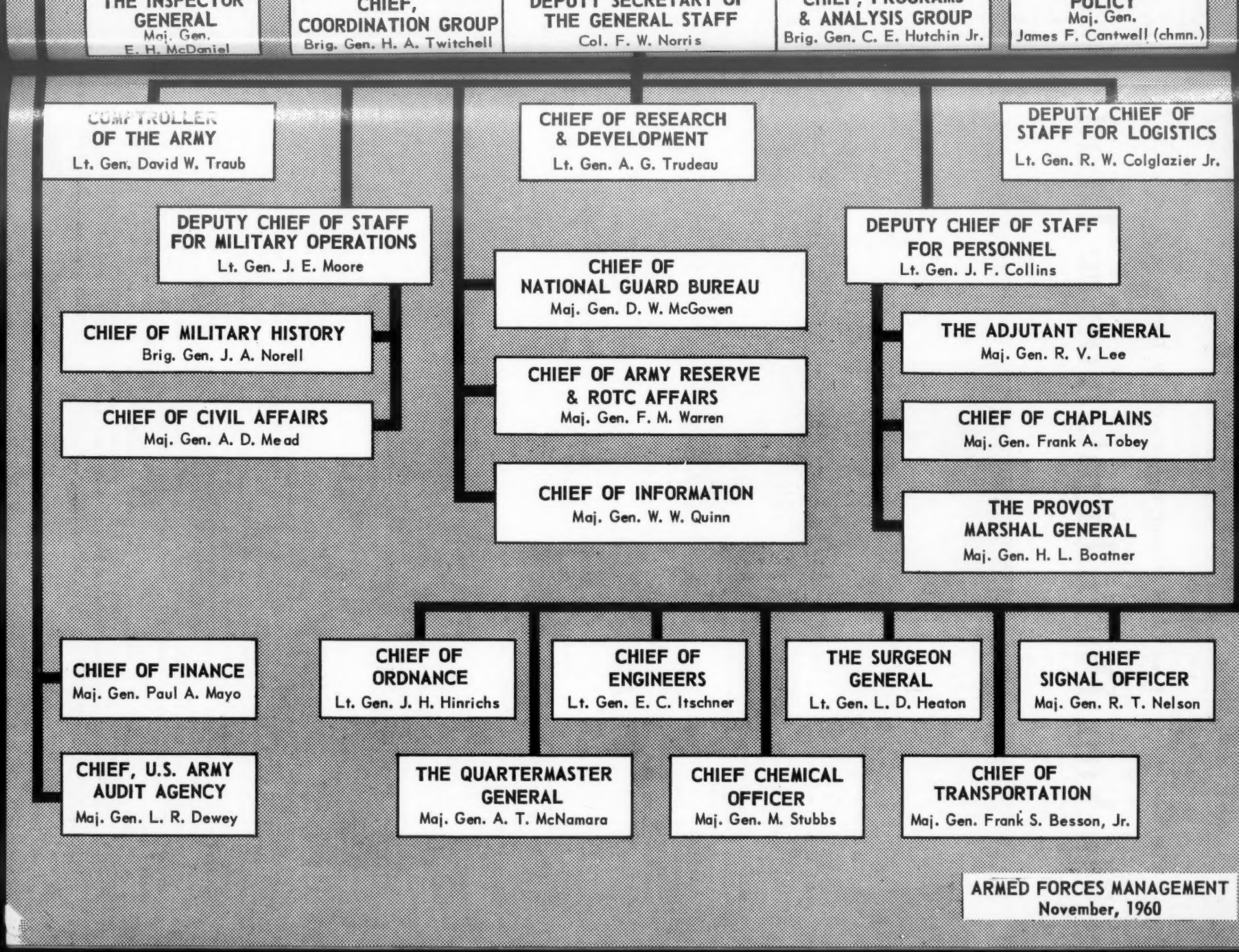
GENERAL STAFF COMMITTEE ON N.G. & ARMY RESERVE POLICY
Maj. Gen.
James F. Cantwell (chmn.)

THE INSPECTOR GENERAL
Maj. Gen.
E. H. McDaniel

CHIEF, COORDINATION GROUP
Brig. Gen. H. A. Twitchell

DEPUTY SECRETARY OF THE GENERAL STAFF
Col. F. W. Norris

CHIEF, PROGRAMS & ANALYSIS GROUP
Brig. Gen. C. E. Hutchin Jr.


THE INSPECTOR GENERAL
Maj. Gen. E. H. McDaniel
CHIEF, COORDINATION GROUP
Brig. Gen. H. A. Twitchell
DEPUTY SECRETARY OF THE GENERAL STAFF
Col. F. W. Norris
& ANALYSIS GROUP
Brig. Gen. C. E. Hutchin Jr.
POLICY
Maj. Gen.
James F. Cantwell (chmn.)
COMPTROLLER OF THE ARMY
Lt. Gen. David W. Traub
CHIEF OF RESEARCH & DEVELOPMENT
Lt. Gen. A. G. Trudeau
DEPUTY CHIEF OF STAFF FOR LOGISTICS
Lt. Gen. R. W. Colglazier Jr.
DEPUTY CHIEF OF STAFF FOR MILITARY OPERATIONS
Lt. Gen. J. E. Moore
CHIEF OF NATIONAL GUARD BUREAU
Maj. Gen. D. W. McGowen
DEPUTY CHIEF OF STAFF FOR PERSONNEL
Lt. Gen. J. F. Collins
CHIEF OF MILITARY HISTORY
Brig. Gen. J. A. Norell
CHIEF OF ARMY RESERVE & ROTC AFFAIRS
Maj. Gen. F. M. Warren
THE ADJUTANT GENERAL
Maj. Gen. R. V. Lee
CHIEF OF CIVIL AFFAIRS
Maj. Gen. A. D. Mead
CHIEF OF INFORMATION
Maj. Gen. W. W. Quinn
CHIEF OF CHAPLAINS
Maj. Gen. Frank A. Tobey
THE PROVOST MARSHAL GENERAL
Maj. Gen. H. L. Boatner
CHIEF OF FINANCE
Maj. Gen. Paul A. Mayo
CHIEF OF ORDNANCE
Lt. Gen. J. H. Hinrichs
CHIEF OF ENGINEERS
Lt. Gen. E. C. Itschner
THE SURGEON GENERAL
Lt. Gen. L. D. Heaton
CHIEF SIGNAL OFFICER
Maj. Gen. R. T. Nelson
CHIEF, U.S. ARMY AUDIT AGENCY
Maj. Gen. L. R. Dewey
THE QUARTERMASTER GENERAL
Maj. Gen. A. T. McNamara
CHIEF CHEMICAL OFFICER
Maj. Gen. M. Stubbs
CHIEF OF TRANSPORTATION
Maj. Gen. Frank S. Besson, Jr.

ARMED FORCES MANAGEMENT
November, 1960

Army Chief of Staff, Gen. George H. Decker

"If You Don't Fight, You're Dead"

EARLY last month, 58-year-old George Henry Decker moved to the other side of the spacious executive suite in room 3E668, the Pentagon, to take over the top military job in the Army: Chief of Staff.

To the steady parade of people (which requires him to be in the office by eight in the morning, sometimes stay as late as three the following morning), the new man is, if anything, just like the old one only more so.

Decker's predecessor, Lyman L. Lemnitzer (see page 34), before he moved downstairs and halfway around the building to become Joint Chiefs of Staff Chairman, had acquired a reputation for being calm, quiet, unobtrusive—and effective.

George Decker is even calmer and quieter and has had the reputation longer—since World War II when he was Sixth Army chief of staff and his boss, Gen. Walter Kreuger, said of him: "You could set a bomb off under his desk and he wouldn't turn a hair."

In vital Pentagon debates, his composure is probably one of his most effective assets, as his verbal opponents have already discovered, usually too late. "I sometimes think he cultivates it," says one fan, "just to throw you off guard. I've never known him to raise his voice. He just keeps plugging away and, when you least expect it, he scores."

(On the other hand, one wag insists all this serenity really comes from five-handicap golfer Decker's experience, since 1924, "lining up those long, curling downhill putts.")

But if the way Army's problems will be handled is the same, only more so, so are the problems. Many top Pentagon executives, in all three Services, have a standard "facts of our life" outline around which they build, at the drop of a banquet fork, nearly every public speech they make. If George Decker had such an outline, it would almost surely include these:

In its role as an element of the deterrent force, the Army must perform many tasks.

1—It must provide forces overseas in critical strategic areas.

Says Decker, "The international situation being what it is, and likely to

Gen. Decker

so remain, one of our primary concerns must be to give meaning to world-wide U.S. commitments. Army forces deployed overseas have a terrific psychological effect on our allies—they provide real evidence that the U.S. stands with them shoulder-to-shoulder.

"Right now, I see no military justification for reducing the size of our forces overseas." (Army strength in Europe is already "considerably below" Gen. Norstaad's stated NATO requirements.)

2—It must maintain mobile, combat-ready forces in strategic reserve in the United States, capable of rapid reinforcement of our overseas forces or to bolster other threatened areas overseas.

To Decker, this means, in hardware, many things:

Item: "In battlefield mobility, we are depending more and more on rugged air vehicles. The numbers of vehicles we're getting are not great, but little by little we're building it up. We are not creating another 'Air Corps.' Our air vehicles are integral parts of Army units like jeeps and trucks. We want to be able to pass over rivers, swamps, mine fields and contaminated areas rapidly."

Item: "We need modernization of strategic airlift. If our troops can't reach the places where they have to be *in a hurry*, their ability to perform their mission is going to be seriously jeopardized." Decker usually follows this observation with "let me emphasize, I'm not trying to criticize anybody. I'm just stating an obvious requirement."

Item: "The Army has an interest in space—*primarily from the point of view of doing a better job on the ground.*"

Item: "Our combat readiness and equipment status are today the best they've ever been in peacetime, but there still is a large number of new weapons and new equipment we have successfully developed and which we want to get into the hands of troops in quantity but are unable to do so."

3—The Army must provide air defense forces required with those of the other services for the defense of the U.S. and Canada against air attack.

Says Decker: "We want to push the ballistic missile defense program. Nike-Zeus progress indicates it will be effective—as we hope to prove when it's tested." (Current timetable says in 1962.) "We feel it will become a very important part of U.S. deterrent posture."

4—Army must maintain a base for rapid mobilization, including strong, ready civilian component forces.

From Decker: "As the Army has been insisting for some time, we need strong, combat ready Army National Guard and Army Reserve forces to reinforce the Active Army rapidly in any emergency. These reserve forces and the Active Army look to the ROTC program for the majority of their well educated and trained officers.

"Currently our requirements for the entire Army run about 14,000 officers a year from ROTC. We believe that compulsory ROTC provides a broader base and allows for more selectivity in filling our requirements for officers. We support compulsory ROTC for this reason.

"We aren't trying to get any more than 14,000 but we don't want any less either. To give you an idea how tough this problem could be, in mobilization, we had to boost the officer cadre in World War II from 12,000 to 800,000 officers."

As for hardware, "we need to en-

large our stockpiles to tide us over until mobilized production could catch up."

How about the people now serving? "The Army is composed of people. I think it's a key part of my job to see that we give them an environment where they will produce the best that's in them.

"If Army personnel management has been criticized for any one thing, it is that it's so impersonal. I don't intend to throw out good personnel management practices, but we must continue to give as much attention, in our decisions, to the fact that these are *people* and not mere numbers we're dealing with."

5—The Army has also the very important function of equipping and training the armies of our Allies in some 42 countries around the world.

Adds Decker: "I would like to mention one very important aspect of the contribution to deterrence by our overseas Army forces—the encouragement they offer those peoples living in the shadow of the Iron and Bamboo curtains, the visible evidence of U.S. intentions to meet our mutual security obligations."

Concludes Decker, about the whole program: "While these objectives are generally recognized, there are, I am sure, wide areas of disagreement as to how they can best be attained."

Views on JCS

Which is where the Pentagon's Joint Chiefs committee way of doing things comes in. Because he's been around Washington long enough to have been exposed to most of the reorganization schemes, and because the subject is sure to come up again, and because he will be embroiled in the current setup and the effectiveness of its operation from now on, his views are worth noting. It's unlikely that he will become a strong crusader for any drastic changes in how Defense is run.

Says Decker, "The problems don't arise at the Joint Staff level. They crop up at the Joint Chiefs of Staff, or decision, level where the Chief of a Service has the background to tell whether a proposal is feasible or not for his own Service—and has the responsibility for carrying the decision out once it is made. Divorcing the Chief from his Service or setting up a super staff would, I think, be a mistake.

"For many of the same reasons, that is, risks of divorcing support from responsibility for a mission, I do not advocate the Fourth Service of Supply proposal—particularly because supply is a major factor in mission success."

In sum, "The experts have been studying many of these proposals for a long time. Some of the ones, which look so good on paper, come usually from people who don't fully understand all the problems."

Foreseeing a sympathetic (though not necessarily agreeable) audience when he presents his ideas in Joint Chiefs meetings, he intends "To go as strong as we can for the necessary support—until the final decision is made, by those who are supposed to make it, the ones who must consider these other factors (economic, social, etc.).

"There is competition here because this is where the resources are divided up. If you don't fight, you're dead. Once there's a decision we'll do the best we can with what we get."

George Decker has been doing the best he could almost since high school days. Born in Catskill, New York, he was too young to go to World War I, managed to get into the New York state guard, anyway. He stayed with it until he entered Lafayette College, Pa., in 1920. He graduated four years later with a Bachelor of Science degree (economics).

Entitled to a regular Army commission (because he had been an honor student), he was leery of the idea when it was first proposed. What finally swayed him: recalling (in 1924, long after the U.S. had busted up its World War I fighting machine), an address by Maj. Gen. Muir, commander of what was then the Third Corps area. Said Muir in effect, "There will always be more wars."

After Decker got in, "I liked the Army so well, I've never wanted to get out." His first assignment was at Plattsburg Barracks, N.Y., with the 26th Infantry, where he was introduced to (1) Helen Inman, (2) golf. He married them both. The marriage to Miss Inman produced two children: a 32-year-old daughter, Jane E. Francisco, married to an Army captain; and 28-year-old son, James I., working for General Electric in Schenectady.

Background

The marriage to golf has produced a mid-70s game and a flock of trophies —an even more noteworthy accomplishment because he gets little chance to play, three times in the past year, he's tried to play golf during the week. He got all the way around once, made it to the 9th hole once, got only as far as the fifth hole a third time—before being called back to the Pentagon.

Following a series of assignments in the U.S. and Hawaii, he was ordered into Washington for duty in the Office of the Assistant Chief of Staff, G4. Major Decker had just barely unpacked when World War II broke out. Like Lemnitzer, he saw plenty of action during the war. Assigned, in 1943, as Sixth Army deputy chief of staff, he fought the long haul of the Southwest Pacific from New Guinea to Japan, earned the silver star, climbed to major general's rank, and Sixth Army chief of staff.

No hunter for limelight, Decker will be pushing in his patient way for an Army with more muscle. When he delves into the reasons why, they come out something like this:

"First, we are approaching relative nuclear parity with the Communists. In situations short of general nuclear war, nuclear weapons may or may not be used tactically. So it seems clear that whenever Army forces are committed to action in the future the threat of introduction of nuclear weapons to the battlefield will be present in practically all cases. The effect of this is to impose on the Army the unquestionable requirement for a dual capability.

The Future

"The salient problem of the Army commander of the future—as I see it—will be to find and destroy enemy forces, while rapidly maneuvering or disposing his own troops so as to offer as little as possible in the way of profitable target since it seems reasonably certain that once atomic weapons are introduced to the battlefield, a target found will be a target destroyed.

"If you will accept this premise then it would seem that the profile of a Modern Army should be based on these considerations:

1—It should be equipped so that it is able to locate and destroy enemy targets promptly with either conventional or atomic firepower as appropriate.

2—It should have tactical ground and air mobility to enable it quickly to concentrate at a decisive point or to disperse equally rapidly.

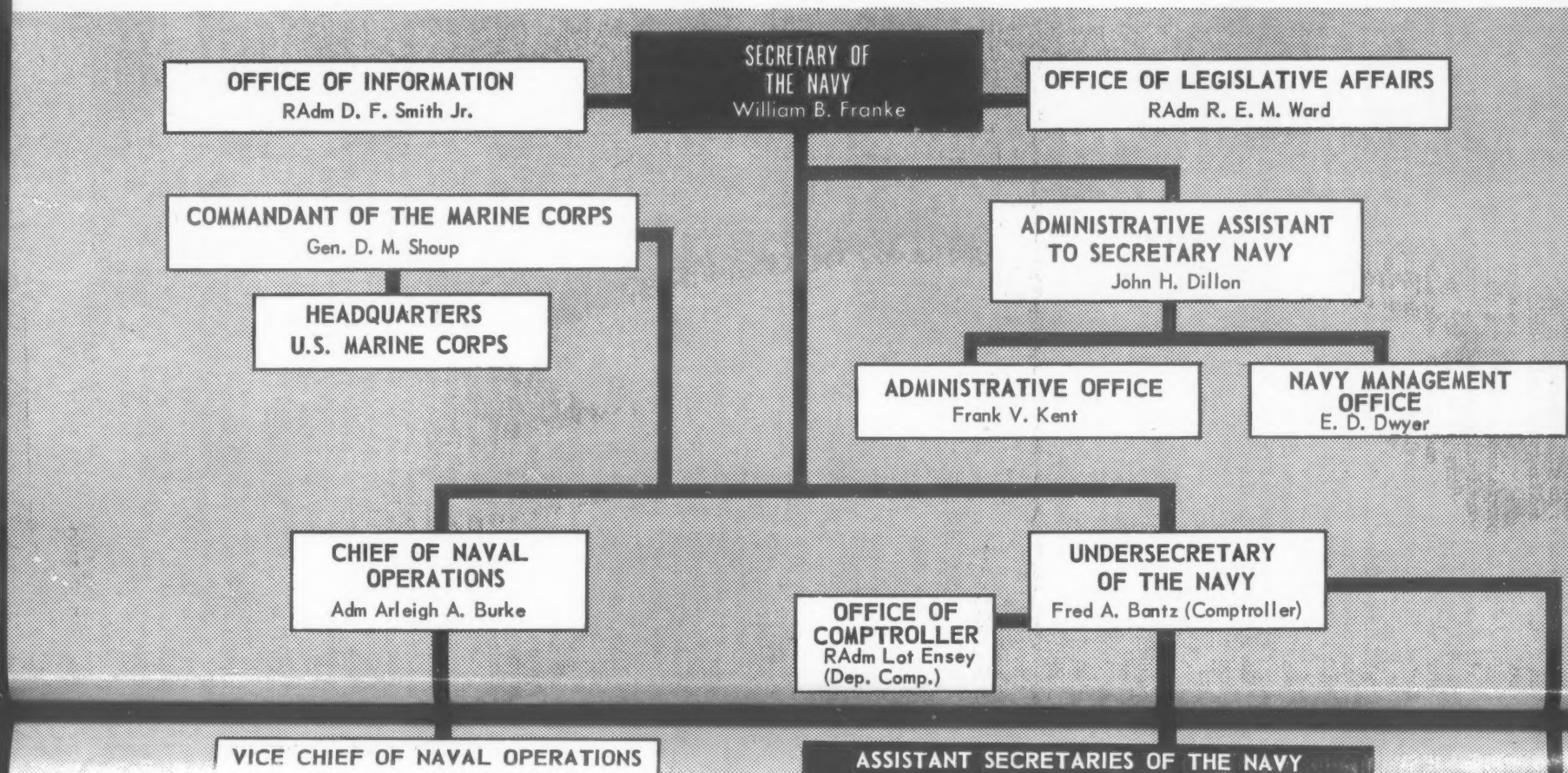
3—It should have the communications necessary to enable the commander to control widely dispersed and rapidly maneuvering formations.

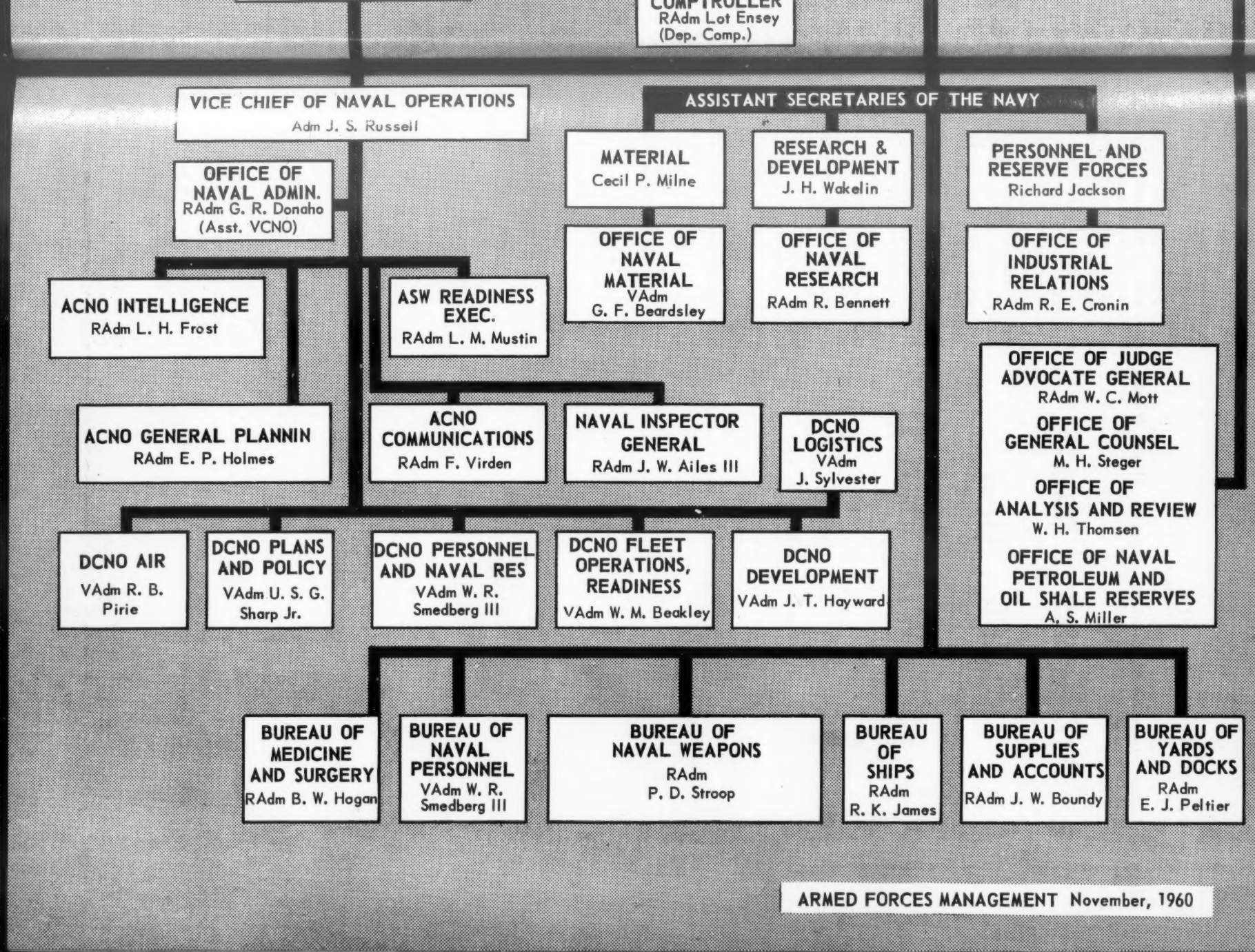
4—Its logistical system must be capable of delivering and maintaining all of the many items required on the modern battlefield without offering a lucrative target to the enemy.

And finally, it must be capable of moving into the enemy's homeland, restoring order and controlling the civilian populations.

Adds George Decker, "We are quite certain the Russians have the hardware, etc., to do these things, or are close to getting it. All we want is what will be necessary to take care of them if they do start something." ■

DEPARTMENT OF THE NAVY





ARMED FORCES MANAGEMENT November, 1960

Chief of Naval Operations, Admiral Arleigh Albert Burke

"No Better Than The Men Who Man It"

AT 11 p. m. on 5 May, 1943, Destroyer Division 43's Flag Ship, the *Waller*, swung at anchor near one of the New Hebrides Islands in the Pacific.

In a hot, below-decks cubicle, a sandy-haired, blue-eyed, 42-year-old U.S. Navy Commander named Arleigh Albert Burke sat at a drop leaf desk writing a note to his Task Force Commander. The note said in part:

"When contact with an enemy force is made, destroyers in the van should initiate a coordinated torpedo attack *without orders*. (Because) such delegation of authority (by a Task Force Commander) may result in disastrous consequences if a subordinate commander makes an error, it requires more than is usually meant by confidence: *it requires faith.*"

Shortly after he wrote that "doctrine of faith," destroyer man Burke acquired a now-widely known reputation for moving at "31-knots," a speed something in excess of the rated capacity of most destroyers in World War II. His belief: "Arrive a little earlier than expected, ready to fight, and you'll win your share of the battles."

If the way today's Chief of Naval Operations guides the Navy could be summed up in a handful of words, the summation would include those two philosophies. They show up in his defense of the Joint Chiefs of Staff System (in the now long standing hassle over "JCS or a single military service"). Says Burke:

"I have been watching with some concern as the several public pressures toward centralization and authoritarianism in defense begin to mesh together to form a single pattern.

"Each one of these proposals should be carefully examined. I would favor constructive changes, but, before we make any changes, let's be sure they will actually improve our method of arriving at proper decisions. There are many things other than organization which contribute to the success or to the smooth operation of the decision-making process. The entire process is limited by human mentality. No matter how brilliant, no man is omniscient. There is no organizational or procedural means for removing that limitation.

"We are told that we need some better tie to military decision. Faster decision? Wiser decision? We are told that we need an end to differences between the services. We are told that we should think and speak as one voice.

"This is a very appealing conclusion when its proponents wheel up their semantic artillery. 'Bickering' is scapegoat ammunition, so honest dif-

ferences in judgment are called 'bickering.' 'Argument' is a trigger-happy word, so discussion and consideration and debate and examination of these incredibly complex problems is called 'argument.'

"There are four of us serving as chiefs of our services and we—together with the chairman—are the Joint Chiefs of Staff. We each have different patterns of thought, we each have different concepts, we each bring different skills, different information, and different experience to our common council and to the President and to the Congress and to the United States. Money is the vehicle by which we translate ideas into action. This is power. And the Pentagon is given roughly two thirds of the national controllable power each year.

"I shudder at the thought of more concentration of power in the Pentagon, of more uniform control over the national destinies, of suppression of ideas under the guise of efficiency, of the concealment of responsibility in the anonymity of a staff, in the separation of responsibility from the authority to commit the nation to a course of action.

"I suggest that no form of organization can be better than the men who man it."

Navy Battler

Arleigh Burke has been blunt about his feelings on this matter since his most controversial days: directing OP 23—more familiarly known as the "Revolt of the Admirals." Officially, OP 23's function was to prepare studies supporting Navy's aircraft carrier position in the raging arguments of 1948 over it compared to the B-36 long-range bomber. What his studies came up with have earned him credit, in some Navy circles at least, for "winning Navy's fight for survival."

This long-standing belief in Navy's value as a separate service has been just as generously applied to defending the separate-service integrity of Army and Air Force, during the Pentagon's many intramural debates on defense organization. Burke's known attitudes led many to anticipate a new explosion when Defense Secretary Gates set up the new strategic target planning group—to be headed by Strategic Air Command Chief, General Thomas Power. The explosion never occurred.

Said Burke of the new group: "General Power and his joint staff are going to have a tough job. It is extremely important that the plans are correct; that they provide for the most effective use of all our striking elements. This is why the Navy is sending some of its very best officers to the Directors Staff. They will do everything possible to insure that the plans are the best; that General Power gets all the help he needs; that the procedure, which has been set up, works and works well."

Vindication of Burke's philosophies (faith in his people and "arriving a little earlier than expected") came impressively this year with the successful launching of the Polaris missile from a submarine. Says Burke: "We were proud of it four years ago when people said it would not work. We were proud of it about two years ago, when people said it might work. We are just as proud today, when everyone is convinced that it does work."

But, just as Burke and the Navy have achieved major successes since he became CNO, they also have major problems. In spite of proven ability to stamp out brush fires, Navy's "conventional carrier task force" is still subjected to bitter attack by critics from all directions.

And Navy has a personnel problem: obtaining and retaining trained personnel capable of operating efficiently Navy's complex modern armaments. Said one member of his staff, "Without highly trained personnel, all the rest of our deterrent investment is wasted."

The rest of his team is betting if anybody can pry the resources loose at all, it will be Arleigh Burke. Born on a farm near Boulder, Colo., the eldest of six children, Burke entered the Naval Academy with the Class of 1923.

Midshipman Burke acquired a temporary nickname "Billie" (in tribute to the actress), demonstrated an impressive capacity for vanilla ice cream and hot dogs (to which he is still addicted today) and graduated 71st in a class of 411.

He married Roberta Gorsuch of Washington the day after graduation, went back to school to earn a Master's Degree in Chemical Engineering from the University of Michigan and, when World War II started, was on duty at the Naval Gun Factory in Washington.

Little publicized, hardly noted outside of Navy circles, (except in the "Revolt of the Admirals") Arleigh Burke's efforts on behalf of the Navy first gained official endorsement when President Eisenhower reached over the heads of 92 of Burke's senior officers to pick him as Chief of Naval Operations in 1955. Since then, Burke has had fastened after his name every admirable adjective that can be possibly applied to the boss of one of the largest corporations in the world.

And he is unquestionably the boss. "Everything we do around here has the Burke flavor." Unquestionably sincere, dedicated, Burke has fought zealously for the Navy's needs both in the intramural Pentagon warfare and on Capitol Hill. At the same time, he has avoided creating the table-pounding, rabble rousing image often left by disciples of a particular viewpoint.

Key to his dedication: His staff used to be able to force him to try a little physical therapy at his small farm in McLean, Va., now observes that his only exercise is "running up and down the corridor to the Secretary's office."

Soft Spoken Savvy

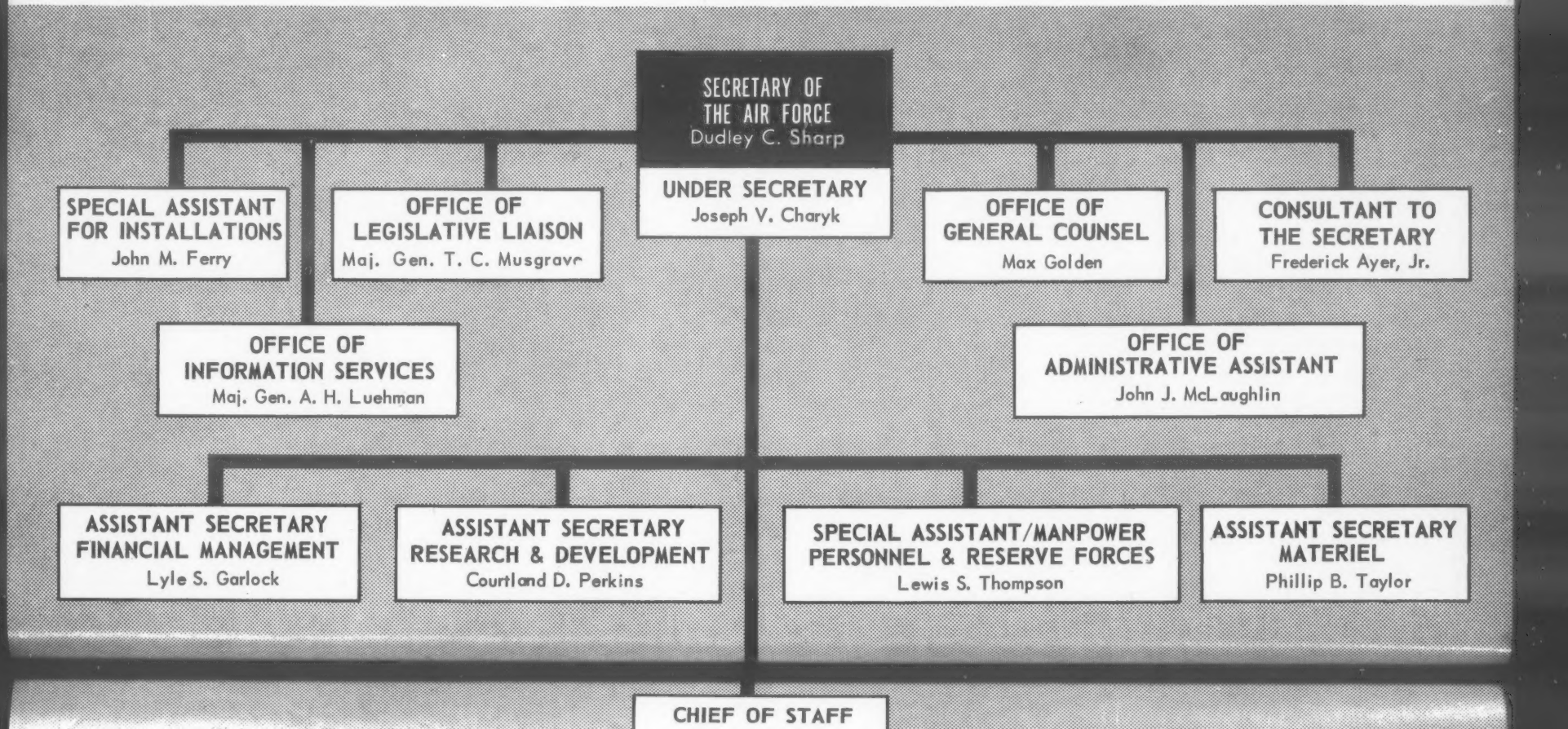
Soft-spoken Arleigh Burke gets the Navy's job done with savvy, plenty of hard work, and an adage: "When you're trying to get something done, don't worry too much about stepping on someone else's toes. Nobody gets his toes stepped on unless he is standing still or sitting down on the job." He arrives about 7:30 every morning, rarely leaves before 9 or 10 at night—unless he has a dinner engagement. He sandwiches into this grueling schedule an average of three major speeches a month, works Saturdays (from 7:30 until 6), Sundays from 9 or 10 until 2 p.m. Even his immediate staff, devoted to him without question, finds it hard to explain how such a quiet, friendly Swede can leave no doubt, up and down the Pentagon's E-ring, about who is running the Navy show.

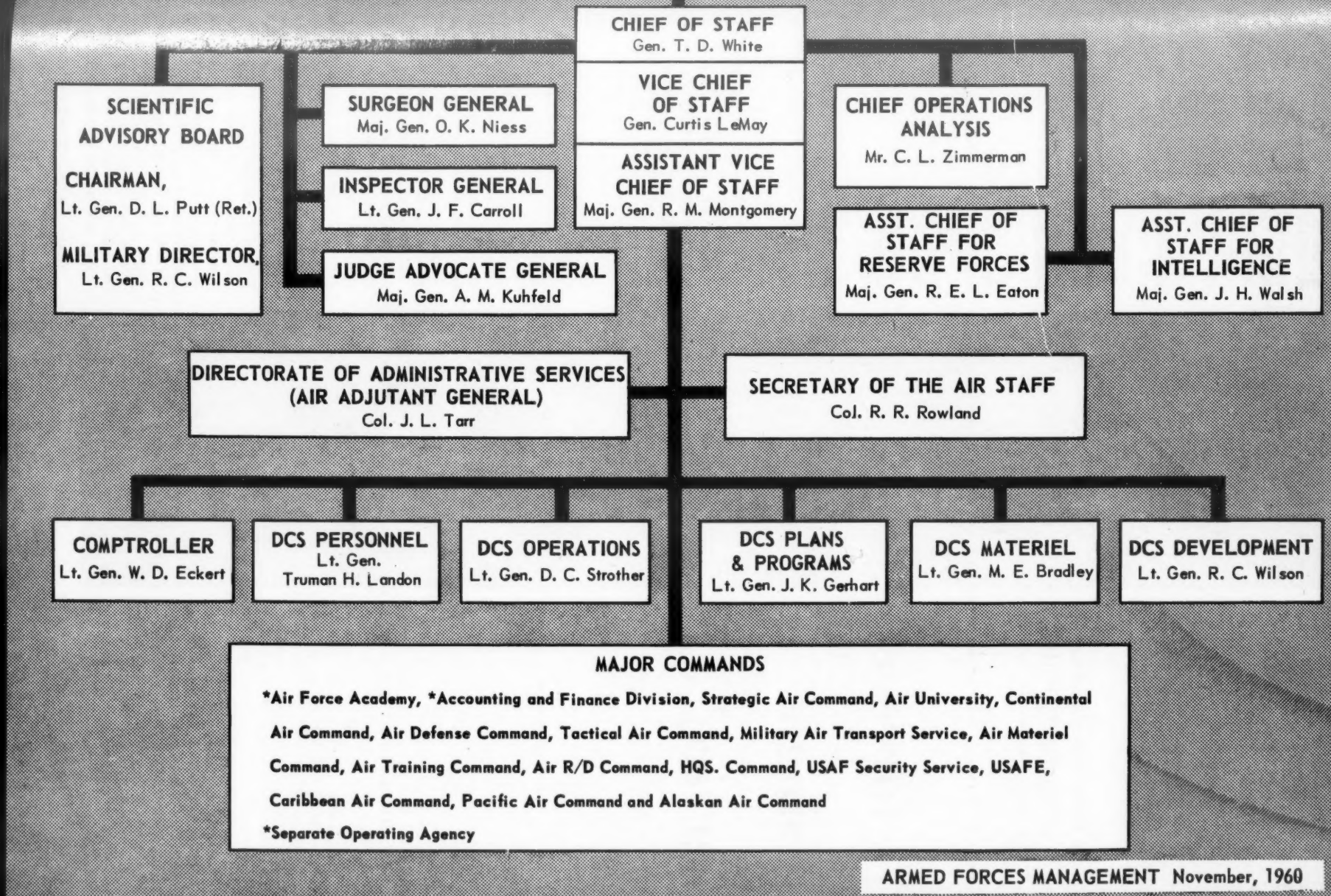
It is even more difficult for visitors to correlate the reported "iron man" image with terrific capacity for work, the tough intramural fighter, the savvy executive, with the relaxed, pipe smoking sailor who will talk with fact supported casualness about Navy's problems and progress at the drop of a question.

His Navy background is black shoe (non-flying) but he is one of the most air-minded men in the Navy. Still, from all Navy's areas of interest, "I still don't feel I'm getting enough contact with younger officers." Their ideas are important to him and a key to his doctrine of faith. Then too, easiest way to fall out of favor with Arleigh Burke is to tell him "what you think I want you to think, and not what you really believe."

Credited by his friends with obtaining "a broader grasp of the international situation, becoming a mature statesman," within the past year, Arleigh Burke, when he philosophizes about this at all, says, in essence, "Wise solutions, intelligent decisions, do not come easily. Developing resolutions; screening them; and reaching decisions; can never be a smooth process." ■

DEPARTMENT OF THE AIR FORCE

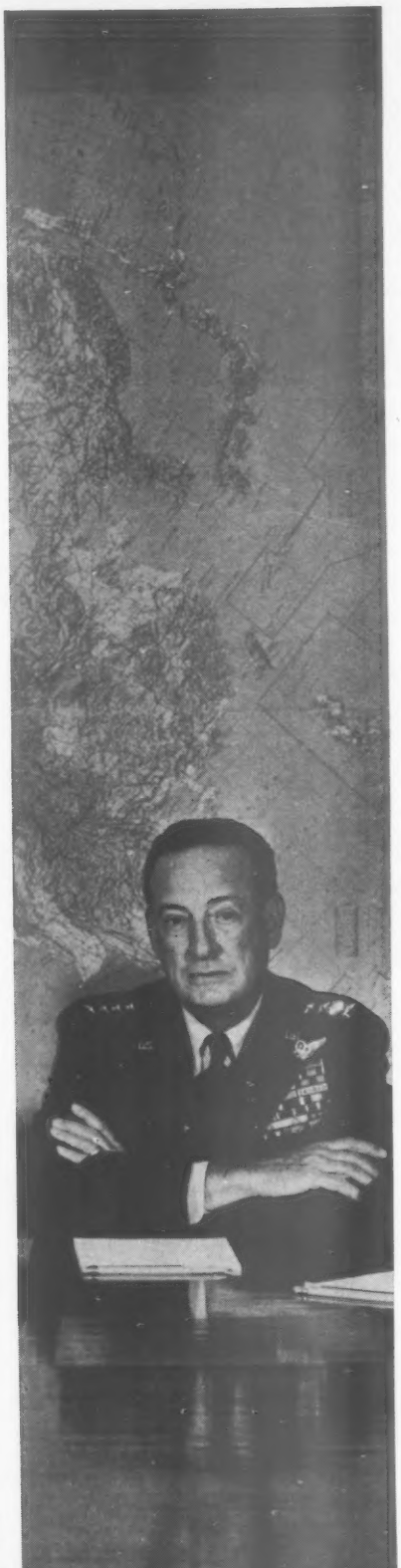



CHIEF OF STAFF
Gen. T. D. White
VICE CHIEF OF STAFF
Gen. Curtis LeMay
ASSISTANT VICE CHIEF OF STAFF
Maj. Gen. R. M. Montgomery
SCIENTIFIC ADVISORY BOARD
CHAIRMAN,
Lt. Gen. D. L. Putt (Ret.)
MILITARY DIRECTOR,
Lt. Gen. R. C. Wilson
SURGEON GENERAL
Maj. Gen. O. K. Niess
INSPECTOR GENERAL
Lt. Gen. J. F. Carroll
JUDGE ADVOCATE GENERAL
Maj. Gen. A. M. Kuhfeld
CHIEF OPERATIONS ANALYSIS
Mr. C. L. Zimmerman
ASST. CHIEF OF STAFF FOR RESERVE FORCES
Maj. Gen. R. E. L. Eaton
ASST. CHIEF OF STAFF FOR INTELLIGENCE
Maj. Gen. J. H. Walsh
DIRECTORATE OF ADMINISTRATIVE SERVICES (AIR ADJUTANT GENERAL)
Col. J. L. Tarr
SECRETARY OF THE AIR STAFF
Col. R. R. Rowland
COMPTROLLER
Lt. Gen. W. D. Eckert
DCS PERSONNEL
Lt. Gen. Truman H. Landon
DCS OPERATIONS
Lt. Gen. D. C. Strother
DCS PLANS & PROGRAMS
Lt. Gen. J. K. Gerhart
DCS MATERIEL
Lt. Gen. M. E. Bradley
DCS DEVELOPMENT
Lt. Gen. R. C. Wilson
MAJOR COMMANDS
*Air Force Academy, *Accounting and Finance Division, Strategic Air Command, Air University, Continental Air Command, Air Defense Command, Tactical Air Command, Military Air Transport Service, Air Materiel Command, Air Training Command, Air R/D Command, HQS. Command, USAF Security Service, USAFE, Caribbean Air Command, Pacific Air Command and Alaskan Air Command
*Separate Operating Agency

ARMED FORCES MANAGEMENT November, 1960

Air Force Chief of Staff, Gen. Thomas D. White

"I foresee a single service"



In cloistered conference, where it's most effective, he leads many of the attacks on the status quo.

FOR A MAN WHO had as much trouble getting into the Air Force as he did, General Thomas Dresser White, Chief of the Air Force Staff, has managed to make what could certainly be called a successful career out of his military life.

It is probably true that much of the patience Gen. White must exercise in his present job was nurtured in the rocky soil of the U.S. Military Establishment between the two World Wars.

At the start of a career that would have driven most men running to a reliable and predictable civilian job, Gen. White found himself facing the following:

- Graduating from West Point on 15 June 1920 not as a commissioned officer, but simply as a "graduated cadet"—the class commissions came on 2 July 1920—placed his class, in his words, "at the absolute bottom of the World War I hump."
- A year later—and the first glimpse a brighter spot—Gen. White was promoted to First Lieutenant, with date of rank retroactive to the year before, and back pay promised. But by the time the pay finally showed up, First Lieutenant Thomas White had bet the amount of the back pay that it wouldn't come through. Comments White ruefully, "I haven't gambled much since then."
- Once he made first lieutenant, he was requested to resign his commission, re-up as a Second Lieutenant or remain a civilian. (This was a depression bred economy measure, applied across the board in the Army.)

Finally, after fifteen years of ups and downs, Lieutenant White made captain.

Military Diplomat

Muses the top man in the Air Force, "It was a different kind of a job in those days. Now, it's not really unusual to find a full colonel with that much time in the service who is getting impatient about his first star."

Starting as an infantryman, White early in his career wanted to get into the Air Corps. But true to form for the early part of his career, it wasn't an easy job. The reason: flight training was mandatory for a transfer, and White had no flight training, wanted to join now, train later.

This one was one of the few problems that stumped General White, and he finally went through flight school. But not before he had tried just about every way around it in the book.

(For instance, on the out-and-reenlist measure, White talked as fast as he could, but was signed up in the Infantry, not the Air Corps as he wanted.)

But once in the Air Corps, and with

the rough first years out of the way, White began to set a more reasonable pace for himself on the road to the top job in the Air Force.

Like his former West Point classmate, Chairman of the Joint Chiefs Gen. Lyman L. Lemnitzer, White managed to pick up considerable military/-diplomatic experience.

One of the highlights: through a quirk of a school calendar, then-First Lieutenant Thomas White became the first U.S. military attache to Communist Russia, arriving ahead of and acting in the absence of the regular attache who was in the Army War College and couldn't report in on time.

This left White in the position of acting military Attache—the first U.S. military man to be a representative of the U.S. once this country got around to recognizing the new Communist state.

Why Balance Forces

Given the international nature of the top job in the Air Force, it is fitting that Gen. White should be holding down the big office on the Pentagon's E-ring. The reason: White is probably one of the most accomplished linguists in the Pentagon, speaking a range of seven languages, from Spanish to Russian to Chinese.

In terms of the job, White sums up the value this way: "I think this experience was valuable for me in a number of ways. In dealing with the tasks that come to me here, I can often rely on first hand knowledge of the country involved."

Among the advantages of being a linguist (although White claims he has forgotten much of the language he once knew), the AF Chief of Staff remembers and cites an incident when he was in Northern China.

Having his shoes shined by a Chinese boy, White and the boy were approached by a Russian woman who wanted directions. White was able to understand the question, but didn't know the answer. The result: White translated the question from Russian to Chinese, got the answer from the shoeshine boy, translated the answer from Chinese to Russian.

A more practical use is related by Pentagon associates of the General. A staffer with an Italian magazine requested and was granted an interview with White, showed up with an interpreter in tow.

After the first three questions, White was speaking Italian directly with the interviewer. What happened: an excellent interview, a more-than-surprised interviewer, and satisfaction on all counts.

But language is not the only qualification for running the Air Force. One of the more important ones: the ability to deal effectively with Congress. In this respect White was well prepared, for in 1948 he came to the Pentagon to head the Air Force Legislative Liaison operation.

Looking back on this tour, White says "I really learned a great deal of much value, both for this job, and others that I have held. In spite of that, I can still remember how reluctant I was when I heard about that assignment."

Presently, White must spend "a good deal of time working with Congress, although it's seasonal."

In this phase of running the Air Force, as well as in others, probably the fairest summation of the job is a matter of maintaining a balanced force, within a limited financial framework.

This means not only missiles and airplanes, but strategic forces and tactical forces, the right balance of trained personnel, and enough balanced planning to keep Air Force on top of the world situation in the future.

Testifying before the Senate Defense Appropriations Subcommittee last spring, White summed up the problems, and what is being done about them this way:

"The need to maintain Air Force combat strength on a day to day readiness—combined with the requirement to prepare for the future—has forced us to make some difficult decisions between the present and the future in formulating the budget we are discussing today.

"We have done our utmost to reach the best balance possible. This we have done with due regard to the substantial contributions made to the defense posture of the free world by the Army, the Navy, the Marine Corps and by our allies as well."

Pulls the Stops

It is for this reason, for instance, that the Air Force has pulled the stops out in an attempt to get more money for the nearly-killed B-70 program. Says White, "this is the only bomber development program we have on the books. It offers as well technical breakthroughs that we should be able to use elsewhere."

In another area of Air Force responsibility—tactical air—significant progress has been made toward a long sought objective—a tactical all-weather capability on a global scale.

From a simple money standpoint, General White agrees that tactical air has had to accept a reduction in units along with the Strategic Air Command and the Air Defense Command during the last decade. But, despite this money squeeze and the high price of the complex weapon systems involved, General White notes that today, tactical air possesses substantially greater capabilities than it did a few years past.

The trend in all Air Force phases of operation has been to lop off the number of units doing a given job—there is probably no part of the Air Force that hasn't suffered in this respect. Nevertheless, in terms of overall combat strength, the Tactical Air Command and the overseas tactical Air Forces now possess far greater on-target effectiveness than ever before.

General White points out that the newest tactical fighter, the F-105D, with its capabilities for precise navigation, quick reaction, long range and improved all-weather weapon delivery provides a new and more selective punch. Tremendously versatile, this airplane will be able to handle just about any fighting job TAC needs done.

White had the following to say about the F-105 to the Senate this year: "Numerous features incorporated in the basic design and subsystems of this aircraft have been specifically pointed toward optimizing the close air support function. For example, almost any conceivable combination of ordnance or fuel can be arranged, depending upon the type of target to be attacked and the distance from the base to the target."

What's Ahead

With much current public and political speculation concerning a complete overhaul of the Defense Department, and with recurrent rumblings in Defense itself along these lines, the views of a man who is likely to be in the forefront of any debate on such a subject are worth quoting.

Says White, "It is not hard at all for me to foresee a single service at some time in the future. However, I don't look for it right around the corner, and I couldn't—at present—advocate such a move."

Within Air Force itself, White must work under the pressure of financial impingements to keep up with the technological advances that are a part of the Air Force job.

With the Air Force moving into areas of technology that, White says, "will represent more and more radical departures from what we are doing now—space systems, for instance, that will create even greater change than missiles," the job of running that service can only get harder in the future.

And it is a safe bet that a tall, easy-going General, Tommy White, will have a busy hand in keeping the Air Force moving. With about half a smile, White sums up his own job and what it entails: "We never have a dull moment." ■

Classified Section

DEFENSE, DEPARTMENT OF:

SECRETARY OF DEFENSE, OFFICE OF THE:

(PNT)

Personnel Locator.....53241

THE SECRETARY OF DEFENSE Hon Thomas S Gates Jr rm3E880..55261
Military Assistant Brig Gen Geo S Brown rm3E880 55261
Military Assistant Capt Means Johnston USN rm3E880 55261

THE DEPUTY SECRETARY OF DEFENSE Hon Jas H Douglas rm3E928 56352
Military Assistant Brig Gen Wm T Seawell rm3E928 71509
Military Assistant Col Edwin F Black rm3E928 77845

ADMINISTRATIVE OFFICE OF THE SECRETARY
Administrative Asst to the Secretary & Dir
Administrative Services Div J R Loftis rm3C916 73111

ARMED FORCES POLICY COUNCIL AND JOINT SECRETARIES rm3E948..73353

DIRECTOR OF DEFENSE RESEARCH & ENGINEERING
Hon Herbert F York rm3E1006..79111
Deputy Director John B Macauley rm3E1006 53637
Deputy Director John H Rubel rm3E1012 57011
Deputy Director Lt Gen Donald N Yates rm3E130 77245
Asst Dir of Def R&E (Air Defense) J P Ruina rm3E140 75385
Asst Dir of Def R&E (Communications) Ralph L Clark rm3D1082....55240
Asst Dir of Def R&E (Naval Weapons) F A Parker rm3E1040 52754
Asst Dir of Def R&E (Rangers & Space Ground Support) A G Waggoner rm3E130..72467
Asst Dir of R&E (Special Projects) rm3D127 73712
Asst Dir of Def R&E (Strategic Weapons) rm3E119 52285
Asst Dir of Def R&E (Tactical Weapons) Fred W Wolcott rm3E1060..52979
Dir of Foreign Programs Chas S Weaver rm3D1060 71644
Dir of Planning Samuel E Clements rm3E1032 56556
Dir of Review & Services Ben G Huff rm3E1009 72525
Dir of Aeronautics T C Muse rm3E1037 53015
Dir of Atomic Biological & Chemical Warfare John E Jackson rm3E1071..75574
Dir of Electronics James M Bridges rm3D1051 57245
Dir of Fuels, Materials & Ordnance John R Townsend rm3E1022....72233
Dir of Guided Missiles Edwin F Sweetser rm3D126 71130
Dir of Maintenance Engineering Edw J Engoron rm3D1018 79125
Dir of Science Orr E Reynolds rm3D1050 74311
Communications & Records Branch Wallace Behrman rm3C140 77261

Defense Science Board
Chairman H P Robertson rm3E1027 54157

Weapons Systems Evaluation Group
Director Lt Gen Wm P Ennis Jr rm2E812 76335
Director of Research C A Boyd rm2E812 54188

ASSISTANT SECRETARY (COMPTROLLER) Hon Franklin B Lincoln Jr rm3E854..53237
Deputy Asst Secretary John M Sprague rm3E850 71101
Dir Economics Div Henry E Glass rm3D855 78191
Deputy Comptroller (Budget) John H Fitch rm3E843 72576
Deputy Comptroller (Accounting Finance & Audit Policy) Howard W Bordner rm3E838..53147
Deputy Comptroller (Financial & Operating Management) W Carl Blaisdell rm3E838..78580

ASSISTANT SECRETARY (HEALTH & MEDICAL)
Hon Frank B Berry M D rm3E772..72111
Deputy Asst Secretary Edw H Cushing M D rm3E772 72113

ASSISTANT SECRETARY (INTERNATIONAL SECURITY AFFAIRS)
Hon John N Irwin II rm3E258..54351
Dep Asst Sec Robt H Knight rm3E266 72307
Dep Asst Sec for Disarmament & Military Affairs Lt Gen John A Dabney rm3E274..75146
Office of Policy Review Maj Gen D V Johnson USA (Ret) rm3D238..73331
Dep Asst Sec for NSC and Plans Haydn Williams rm3E274 78101
Dep Asst Sec for Politico-Mil Aff Robt H Knight rm3E266 72307
Dir of Military Assistance Gen Williston B Palmer rm3E206 53291
USRO Defense Adv/DEFREPNAMA Chas H Shuff rm3E258 54351

ASSISTANT SECRETARY (MANPOWER, PERSONNEL & RESERVE)
Hon Chas C Finucane rm3E966..52334
Deputy Asst Secretary Stephen S Jackson rm3E966 79158
Office of Personnel Policy Dir Maj Gen Ned D Moore rm3C961 74222
Office of Manpower Supply Albert Kay rm3D933 72091
Office of Manpower Requirements & Utilization Dir Gus C Lee rm3D970..78244
Office of Armed Forces Information & Education (T-7 Grv Pt)
Dir Brig Gen Sidney F. Giffin rm2054 54782
Office of Security Policy Dir A Tyler Port rm4B927 78233
Office of Industrial Relations Dir Samuel Silver rm3D935 74854
Office of Emergency Planning Dir John W Clear rm4B934 78314
Reserve Forces Policy Board Chrm John Slezak rm3A926 75253

ASSISTANT SECRETARY (PROPERTIES & INSTALLATIONS)
Hon Floyd S Bryant rm3E760..79155
Deputy Asst Secretary Cooper P Benedict rm3E760 78241
Director of Construction Edw J Sheridan rm3E763 79345
Director of Real Property Management Thos H Hefferan rm3E767..54258

ASSISTANT SECRETARY (PUBLIC AFFAIRS)
Hon Murray Snyder rm2E800..79312
Deputy Asst Secretary Errett P Scrivner rm2E800 53381
Dir Office of Plans & Programs Col Robt F Seedlock rm2E780 71346
Dir Office of News Service Orville S Splitt rm2E761 53201
Dir Office of Public Services James G Dunton rm2E772 52113
Dir Off of Security Review Jos S Edgerton rm2C763 74325
Dir Off of Declassification Policy Vice Adm John M Hoskins (Ret) rm4B868..57116

ASSISTANT SECRETARY (SUPPLY & LOGISTICS)
Hon Perkins McGuire rm3E808..55254
Dep Asst Secretary Philip Le Boutillier Jr rm3E808 71163
Dir for Small Business Policy Andrew W Duncan rm3E821 76907
Dir for Procurement Policy G C Bannerman rm3E822 78177
Staff Dir ASPR Div Cdr J Malloy rm3D774 72026
Staff Dir Proc Specialist Div Col R H McCutcheon rm3D774....77909
Dir for Production Policy R D Crist rm3E784 72807
Dir for Planning & Requirements Policy Glen V Gibson rm3E822...56342
Dir for Supply Management Policy Paul H Riley rm4B740 79238
Dir for Transportation Policy Gayton E Germane rm4B714 77191
Dir for Telecommunications Policy M E Curts rm3E784 76271
Dir of Maintenance Policy John R Taylor rm4B854 76191
Dir for Petroleum Logistics Policy VAdm B B Biggs rm4B723 55644

GENERAL COUNSEL Hon J Vincent Burke rm3E980 53341
Dep Gen Counsel Leonard Niederlehner rm3E980 77248

ASSISTANTS TO THE SECRETARY OF DEFENSE
Atomic Energy Hon Herbert B Loper rm3E1074 56639
Special Operations Gen G B Erskine rm3E114 53333
Legislative Affairs Brig Gen J D Hittle rm3E925 76211

JOINT CHIEFS OF STAFF:
Information.....56291
JCS Duty Officer rm2D877.....78322
The Chairman Joint Chiefs of Staff Gen L L Lemnitzer rm2E873 79121
U. S. Representative to NATO Military Committee and Standing Group Gen C L Ruffner rm3E1082..79444
Joint Strategic Survey Council rm2E1010 73510
Director Joint Staff Lt Gen E G Wheeler rm2E936 74084
Deputy Director RAdm J H Wellings rm2E936 71297
Spec Asst to the JCS for National Security Council Affairs Maj Gen D S Campbell rm2B918..56669
Spec Asst to JCS for Disarmament Affairs Rear Adm P E Dudley rm2B934..71660
Director J-1 (Personnel) Brig Gen Chas G Dunn rm2E824 73062
Director J-2 (Intelligence) Maj Gen R A Breitweiser rm2E966....56830
Deputy Director J-2 (Intelligence) RAdm W S Post rm2E964 56585
Director J-3 (Operations) RAdm Frank O'Beirne rm2D876 73702
Deputy Director J-3 (Operations) Maj Gen D A Burchinal rm2D878..56243
Deputy Director J-3 (Operations) Brig Gen H C Pattison rm2D878..79031
European Division Col J W Totten rm2D865 54846
Pacific Division Col W N Flournoy rm2C877 54807
Middle East Division Col J H Chiles rm2D860 73752
Atlantic Division Capt J B Cresap USN rm2C877 77361
North American Division Col R K Brock USAF rm2D860 54532
Atomic Operations Division Col W J Crumm rm2D865 72081
Director J-4 (Logistics) RAdm H S Persons rm2E932 52732
Deputy Director J-4 (Logistics) Brig Gen T H Beck rm2E832 74121
Plans & Programs Division Capt H G Moore USN rm2C841 ...71629
Theaters Division Col L D VanMullem rm2D840 75890
Transportation Division Col J D Bogue rm2D841 54085
Requirements & Capabilities Division Col F K Eberhard rm2C831..71713
Director J-5 (Plans & Policy) Rear Adm W E Ferrall rm2E1000 55618
Deputy Director J-5 (Plans) Brig Gen B T Harris rm2E996 78655
Deputy Director J-5 (Policy) Brig Gen L J Fields rm2E980 78591
Plans Division Capt D McCampbell USN rm2E987 52924
Policy Division Col J R Wilbraham rm2E977 72523
Subsidiary Activities Division Brig Gen D W Gray rm2E972..54590
Director J-6 (Communications-Electronics) Maj Gen James Dreyfus rm2B878..71998
Deputy Director J-6 (Communications-Electronics) RAdm J S Dorsey rm2B878..72586
Electronics Systems Division Col D S Wood rm2A872 73029
Communications Systems Division Col C J Lester rm2B877 78857
Systems Support Division Capt T A Torgerson rm2A868 71293
Security and Electronic Warfare Division Col J M Kimbrough rm2B889A..55858
Plans and Policy Division Col S S Cerwin rm2B865 56032
International Liaison Group Capt G T Shirley USN rm2B884 74503
Military Communications-Electronics Board Col M C Bowers rm2B857..79284
Director Military Assistance Affairs Maj Gen E J Messinger rm2C961..75225
Director Joint Programs Office Brig Gen J N Donohew rm2C861 ...73329
Joint Advanced Study Group Col M A Moore rm2D970 52954
Joint Meteorological Group Maj N L Peterson rm2B913 74629
Joint Secretariat
Secretary Joint Chiefs of Staff Rear Adm F J Blouin rm2E928 ...72700

ADVANCED RESEARCH PROJECTS AGENCY

(PNT)

Director Brig Gen A W Betts rm3E160 78255
Chief Scientist rm3E160 57105
Dep Dir Lawrence P Gise rm3E172 57151
Dir Policy & Planning Div Wm H Godel rm3E172 57167
Dir Financial Mgt & Rpts Div W W Bolton Jr rm3E183 57073
Asst Dir for Ballistic Missile Defense A M Rubenstein rm2B260 52904
Asst Dir for Materials (Actg) Col Dent L Lay rm3E150 57305
Asst Dir for Nuclear Research & Reliability Carlton M Beyer rm3D170..57060
Asst Dir for Solid Propellants Gene V Mock rm3D148 57063
Asst Dir for Special Projects Urner Liddel rm3E153 56607

DEFENSE COMMUNICATIONS AGENCY

Chief Rear Adm Wm D Irvin rm3D922 57317

ARMY, DEPARTMENT OF THE:

SECRETARY OF THE ARMY OFFICE OF THE:

SECRETARY OF THE ARMY Hon Wilber M Brucker rm3E718 53211
Executive Col Joe S Lawrie rm3E718 53214

UNDER SECRETARY OF THE ARMY
Hon Hugh M Milton II rm2E722..54311
Executive Col Boyd L Branson rm2E722 52947

ASSISTANT SECRETARY OF THE ARMY (FM)
Hon Geo Holmes Roderick rm2E678..54291
Deputy Asst Secretary of the Army (FM) Philip K Robinson rm2E678..78121

ASSISTANT SECRETARY OF THE ARMY (LOG)
Hon Courtney Johnson rm3E613..52254
Deputy Asst Secy of the Army (Log) P E Feucht rm3E616 78998

Army Contract Adjustment Board
Capt Cecil T Lakes rm3E579..55705

Army Member ASPR Committee
Edw C Cox rm3E589..52488

Army Panel, Armed Services Bd of Contract Appeals
Chairman Louis Spector rm3C739 72948

Small Business Advisor to ASA (LOG) J W Askins rm1E570..78113

Labor Relations Advisor Lt Col John S Wilson rm3D332 54369

ASSISTANT SECRETARY OF THE ARMY (MP&RF)
Hon Dewey Short rm2E594..55291
Deputy Asst Secretary of the Army Duncan Hodges rm3E736 72432

CHIEF OF PUBLIC INFORMATION
Chief Maj Gen W W Quinn rm2E636 55135
Deputy Chief Brig Gen C V Clifton rm2E636 74482

DIRECTOR OF RESEARCH & DEVELOPMENT
Director Richard S Morse rm3E390 56153
Deputy Dr Edw G Witting rm3E390 53762

GENERAL COUNSEL Frank G Millard rm2E614 79235
Deputy General Counsel Wm R Compton rm2E614 74807

OFFICE CHIEF OF LEGISLATIVE LIAISON
Chief Maj Gen R L Vittrup rm2C635 56368
Deputy Chief Brig Gen H A Gerhardt rm2C635 76767

ADMINISTRATIVE ASSISTANT Robt H Wiley rm3E732 74247
Information 55378

ADJUTANT GENERAL, OFFICE OF THE:

(PNT)
Information rm1B916.....53241
The Adjutant General Maj Gen R V Lee rm2E536 52039
Deputy The Adjutant General Maj Gen Bruce Easley rm2E536 55328

CHAPLAINS, OFFICE OF THE CHIEF OF:

(PNT)
Chief of Chaplains Maj Gen (CH) F A Tobey rm1E430 53479
Deputy Chief of Chaplains Brig Gen (CH) W J Moran rm1E422 ...52016

CHEMICAL OFFICER, OFFICE OF THE CHIEF

(T-7 GrvPt)
Information General rm2748. 53647
Duty Officer rm2748.....53647

CHIEF CHEMICAL OFFICER Maj Gen Marshall Stubbs rm2748 53580

DEPUTY CHIEF CHEMICAL OFFICER Col A W Meetze rm2748 53541

ASSISTANT CHIEF CMLO FOR PLANNING & DOCTRINE
Col L E Fellenz rm2738..52142
Comptroller Col H C Gilbert rm2725 52710
Deputy Comptroller C W Lombard rm2721 55034

DEPUTY CCMLO FOR SCIENTIFIC ACTIVITIES
Deputy Dr P K Frolich rm2748 53520
Scientific Asst to Deputy CCmLO/SA Dr G L Bushey rm2743 74622

LOGISTICS PLANNING DIVISION
Chief Col C H McNary rm2069 73821
Asst Chief Lt Col W J McDermott rm2069 55028

PROGRAM COORDINATING OFFICE
Chief Col M R DeCarlo rm2739 77002
Asst Chief C G Jones rm2740 53078

CMLC RESEARCH & DEVELOPMENT COMMAND
Commanding General Brig Gen F J Delmore rm2051 74728
Deputy Commander Col J A Martin rm2051 74815
Deputy Commander for Scientific Activities
Dr W H Summerson rm2051..74948

CHIEF OF STAFF, UNITED STATES ARMY:

OFFICE, CHIEF OF STAFF
Duty Officer rm3E668.....53542

Chief of Staff Gen George H Decker rm3E668 52077
Exec & Sr Aide Lt Col J W Walters Jr rm3E668 52110
Vice Chief of Staff Gen Clyde D Eddleman rm3E660 54371
Exec (Asst SGS) rm3E660 54372
Secretary of the General Staff Maj Gen C H Bonesteel III rm3E668 53542

COMPTROLLER OF THE ARMY OFFICE OF THE

The Comptroller of the Army Lt Gen D W Traub rm3A824 ..52510
Deputy Comptroller L W Hoelscher rm3A712 76659
Asst Comptroller Brig Gen R N Tyson rm3A724 74327
Duty Officer rm3A724 53040

Director of Accounting Col A E R Howarth rm2A712 72875

Director of Army Budget Maj Gen C B Duff rm3A666 73937

Director of Contract Financing C Howard Knapp rm3A688 71486

Director of Management Analysis Maj Gen R W Ward rm3B740..74693

Director of Progress & Statistical Reporting
Col J Y Adams rm2A684..76331

DEPUTY CHIEF OF STAFF FOR LOGISTICS

Lt Gen R W Colglazier Jr rm3E584..54102
Asst to Deputy Chief of Staff for Logistics Maj W L Walker rm3E584..54102
Asst Deputy Chief of Staff for Logistics
Maj Gen G O N Lodoen rm3E576..75301
Asst Deputy Chief of Staff for Logistics (Programs & Budget)
Maj Gen S L Myers rm3E562..71646
Executive Col J H Hodges Jr rm3E580 79039

Office of the Logistics Inspector General
Logistics Inspector General Col R B Miller rm1D573 54249
Small Business Advisor J W Askins rm1E570 78113

Technical Liaison Office
Chief E F Hart rm3D625 71342

Director of Financial Operation
Brig Gen O C Harvey rm3B536..73861
Asst Director Col L B Markey rm3B536 78800

Director of Installations Maj Gen L E Seeman rm2E572 74221
Asst Director Col D A Richards rm2E572 56263

Director of Personnel Brig Gen J J Lane rm2C567 54146
Asst Director Col D P Rinque rm1C561 78983

Director of Plans & Materiel Brig Gen L J Lincoln rm3E554...53282
Asst Director Col M L DeGuire rm3E554 53282

Director of Procurement Brig Gen F J McMorrow rm3E575 ...52647
Asst Director Lt Col H A Rasmussen rm3E575 56586

Director of Supply Operations Maj Gen F A Hansen rm2E560..78401
Asst Director Col B E Kendall rm2E564 75411

DEPUTY CHIEF OF STAFF FOR MILITARY OPERATIONS

Duty Officer rm2E687 .....53465, 76381, 76382
Deputy Chief of Staff for Military Operations
Lt Gen J C Oakes rm3E648..52904
Asst Deputy Chief of Staff for Military Operations
Maj Gen B Hamlett rm3E634..75180
Asst Deputy Chief of Staff for Military Operations for International Affairs Maj Gen H H Fischer rm3E634 75584

Air Defense & Special Weapons
Director Brig Gen J T Snodgrass rm3E486 75116

Army Aviation
Director Brig Gen C F Von Kann rm3E526 52882

Operations
Director Brig Gen J W Keating rm3E540 53310

Organization & Training
Director Brig Gen G T Duncan rm3E452 73725

Plans
Director Maj Gen J K Woolnough rm3E472 55032

Programs & Budget
Director Brig Gen S E Gee rm3E518 56772

DEPUTY CHIEF OF STAFF FOR PERSONNEL

Duty Officer rm2E737.....78060

Deputy Chief of Staff for Personnel Lt Gen James F Collins rm2E736..56003

Asst Dep Chief of Staff for Personnel Maj Gen R W Porter Jr rm2E736..52250
Executive Col S R Johnson rm2E737 78060

Director, Women's Army Corps Col Mary L Milligan rm2C733..72102

Director of Civilian Personnel C F Mullaly rm2C681 54237

Director Manpower Management Brig Gen V H Bond rm2C725..77903

Director Military Personnel Management
Brig Gen R A Hewitt rm2E737..55064

Director of Officers Assignments Maj Gen G E Martin rm1E534..71532

Director of Programs Maj Gen I R Stoughton rm2C721 78512

RESEARCH AND DEVELOPMENT, OFFICE CHIEF OF

Duty Officer rm3E412 54997
If no answer call CSSCO Duty Officer 71042
Chief of Research & Development Lt Gen A G Trudeau rm3E412...78186
Deputy Chief of Research & Development
Maj Gen W W Dick Jr rm3E412..78187
Chief Scientific Adv (Consultant) Dr H C Weber rm3E428 72612
Executive Col J K Boles rm3E412 54997

Technical Liaison Office
Chief Ccl J E Shirley rm3D384 52649

Director Developments
Director Brig Gen G W Power rm3E374 75083

DEPARTMENT OF THE ARMY

Director/Plans & Management
Director Col R V Porter rm3D443 56768

Director/Army Research Office
Director Brig Gen W J Ely rm3E374 73710
Deputy & Scientific Director Dr R A Weiss ..... 189 Ext 521

Director/Special Weapons
Director Brig Gen D C Lewis rm3E428 52362

ASSISTANT CHIEF OF STAFF FOR INTELLIGENCE
Duty Officer (1800 hours 0800 hours) rm2C468 53178
ACofS for Intel Maj Gen J M Willems rm2E464 53033
Deputy AC of S for Intel Maj Gen A R Fitch rm2E464 53929
Spec Asst to Deputy for Project ACSI-MATIC
J F Kullgren rm1D485..79830

ASSISTANT CHIEF OF STAFF FOR RESERVE COMPONENTS
Duty Officer rm2E524 73789
(If no answer call TAG Duty Officer 52864)
Assistant Chief of Staff for Reserve Components
Maj Gen J W Bowen rm2E524..52786
Dep Asst Chief of Staff for Reserve Components
Brig Gen M W Schewe rm2E524..56229

INSPECTOR GENERAL, OFFICE OF THE
The Inspector General Maj Gen E H McDaniel rm3C320 52182
Deputy The Inspector General Maj Gen D H Buchanan rm3C320..52883

JUDGE ADVOCATE GENERAL, OFFICE OF THE
The Judge Advocate General Maj Gen G W Hickman Jr rm3E346..75151

NATIONAL GUARD BUREAU Departments of the Army and Air Force (PNT)
Information rm2E313..73718
Duty Officer rm2E338.....56701
Chief Maj Gen D W McGowan rm2E338 52451
Deputy Chief Maj Gen W P Wilson rm2E326 72430

U S ARMY RESERVE AND ROTC AFFAIRS, OFFICE OF THE CHIEF
Duty Officer (Sat 0800-1300 rm2E516 54733
or call TAG DUTY Officer ..... 52864)
Chief Maj Gen Frederick M Warren rm2E516 71784

CIVIL AFFAIRS, OFFICE OF THE CHIEF
Chief Maj Gen A D Mead rm1E440A 76609

MILITARY HISTORY, OFFICE OF THE CHIEF OF
Chief Brig Gen J A Norell rm2003 52064
Chief Historian Dr Stetson Conn rm2011 54630

ENGINEERS, OFFICE OF THE CHIEF OF:

CHIEF OF ENGINEERS Lt Gen E C Itschner rm1230 52052
Deputy Chief of Engineers for Construction
Maj Gen W K Wilson Jr rm1223..55363
Deputy Chief of Engineers for Military Operations
Brig Gen S R Hanmer rm1224..79006
Executive Col W P Leber rm1230 73374

CIVIL WORKS, DIRECTOR OF Maj Gen W F Cassidy rm2340 72925
Deputy Director Col L W Olmstead rm2338 74623

THE ENGINEER COMPTROLLER Col W P McCrone rm1214 53034

MILITARY CONSTRUCTION, DIRECTOR OF
Brig Gen C Renshaw rm2444..71656

MILITARY SUPPLY, DIRECTOR OF
Brig Gen H K Eggleston rm1125..74105

PERSONNEL, DIRECTOR OF Brig Gen W C Hall rm1441A..... 55174

REAL ESTATE, DIRECTOR OF Col O J Pickard rm2231 74224

RESEARCH & DEVELOPMENT, DIRECTOR OF
Chief Col J D Cole rm1306 73855
Tech Director W J New rm1308 73829

TROOP OPERATIONS, DIRECTOR OF
Brig Gen R B Warren rm1339..73465

FINANCE, OFFICE OF THE CHIEF OF

CHIEF OF FINANCE Maj Gen P A Mayo rm1748 52083
Deputy Chief of Finance Col C A Schrader rm1748 54060
Executive Officer Col L B Taylor rm1746 73854

FINANCE AND ACCOUNTS OFFICE, U. S. ARMY

(T-B 2nd & R Sts. S. W.)
Information 71864
Commanding Officer Col E C Shewbridge rm1091 52158

ORDNANCE, OFFICE OF THE CHIEF OF:

Chief of Ordnance Lt Gen J H Hinrichs rm2E400 56261
Deputy Chief of Ordnance Maj Gen H F Bigelow rm2E408 79251
Executive Officer Col R E Peters rm2E394 56000
Information 73619

FIELD SERVICE DIVISION
Chief Maj Gen N M Lynde Jr rm2E364 52660

INDUSTRIAL DIVISION
Chief Brig Gen G C Carlson rm2E444 55371

OFFICE OF MANPOWER (Mun Bg)
Chief Brig Gen C E Rust rm4747 67534

OFFICE OF PROGRAM COORDINATION
Actg Chief Col John M Cone rm2E412 76874

ORDNANCE RESEARCH & DEVELOPMENT DIVISION
Chief Brig Gen C W Clark rm2E380 73345

Artillery & Vehicle Systems Branch
Lt Col G D Carnahan rm2C369..56423

Guided Missile Systems Branch Col B J L Hirshorn rm2E371..56565

Infantry & Aircraft Weapons Systems Branch rm2C365 53896

Nuclear & Spec Components Branch Lt Col W E Mehlinger rm2C361 52876

Program Management Branch Col B D Beach rm2E365 76597

Research Branch Col G F Leist 4th floor Pent Annex #2 73645

U S Army Ordnance Technical Intelligence Agency
(Arl Hall Sta)
Commanding Officer Lt Col R G Blaylock ..... 189 Ext 2262

PROVOST MARSHAL GENERAL, OFFICE OF THE

The Provost Marshal General Maj Gen H L Boatner rm1066 62824
Deputy The Provost Marshal General Col H L Taylor rm1070 62857

QUARTERMASTER GENERAL, OFFICE OF THE

THE QUARTERMASTER GENERAL Maj Gen A T McNamara rm2083 T-B..52000

DEPUTY QUARTERMASTER GENERAL Maj Gen R T Evans Jr rm2083 T-B..71275

SIGNAL OFFICER, OFFICE OF THE CHIEF:

CHIEF SIGNAL OFFICER Maj Gen R T Nelson rm2E258 56604

DEPUTY CHIEF SIGNAL OFFICER Maj Gen E F Cook rm2E254 ...52070
Duty Officer (24 hr service) 56450
Information 56450
Executive Col W M Lauterbach rm2E258 71279

ARMY COMMUNICATIONS SYSTEMS DIVISION
Chief Col W D Joslin rm2E234 53196
Deputy Chief Col W B Feindel rm2E234 54817

PLANS, PROGRAMS & OPERATIONS DIVISION
Chief Col L P Jacobs rm2E270 53356

PROCUREMENT AND DISTRIBUTION DIVISION (Mun Bg)
Chief Maj Gen H L Scofield rm2521 67255

RESEARCH & DEVELOPMENT DIVISION
Chief Brig Gen J C Monahan rm2E238 79376

SURGEON GENERAL, OFFICE OF THE:

The Surgeon General Lt Gen L D Heaton rm2058 63335
The Deputy Surgeon General Maj Gen T J Hartford rm2058 64112

TRANSPORTATION, OFFICE OF THE CHIEF OF:

CHIEF OF TRANSPORTATION
Maj Gen Frank S Besson Jr rm1846 54512
Spec Asst (Air Transp) to Chief of Transportation
F A Ricard rm1840..72626
Chief Scientist R C Kerr rm1839 55238
Small Business Advisor R L Pilcher rm2804 54806
Deputy Chief of Transportation Maj Gen R B Lincoln Jr rm1840 ..54523
Deputy Chief of Transportation for Aviation Maj Gen R D Meyer rm1838 ..76686
General Information 73372

DIRECTOR OF MATERIEL
Col D A King rm1841 77388

DIRECTOR OF MILITARY OPERATIONS
Brig Gen J J Lane rm2847 55521

DIRECTOR OF MOVEMENTS
Col W T Grenier rm1833 53273

ASSISTANT CHIEF OF TRANSPORTATION FOR RESEARCH AND DEVELOPMENT Col D B Parker rm1825 55480

ASSISTANT CHIEF OF TRANSPORTATION FOR TRANSPORTATION ENGINEERING D K Chacey rm1086 53976

COMPTROLLER OF TRANSPORTATION CORPS
Col R K Bannister rm1837..54505

TRANSPORTATION STANDARDIZATION AGENCY
Commanding Officer Major W S Reynolds Jr rm1725 79053

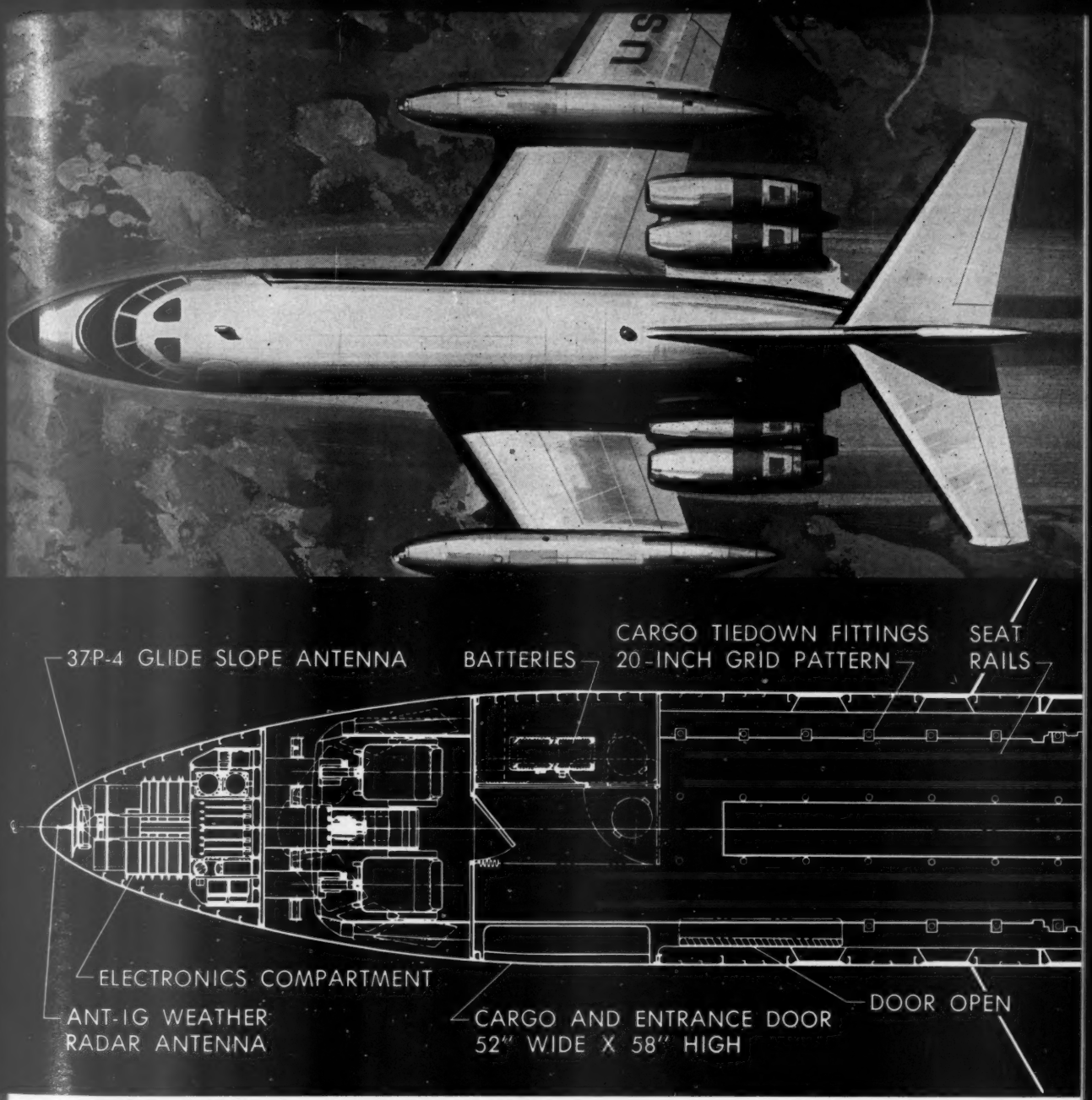
U. S. ARMY AUDIT AGENCY, HEADQUARTERS

Chief U. S. Army Audit Agency Maj Gen L R Dewey rm1005A..77469

U. S. CONTINENTAL ARMY COMMAND

(Pnt)

Liaison Group
Liaison Officer Col J R Pritchard rm3E360 73113
Asst Liaison Officer Maj Catherine Piraino rm3E360 71645



MODERNIZE

The Lockheed C-140 JetStar can bring mission support operations up to date—and save millions too. The JetStar's high cruise speed and long range (Mach 0.814, 2,000 nautical miles) give it a much higher rate of utilization than the average support aircraft now in service. The JetStar's pressurized cargo compartment provides flexible arrangements to transport 14 people, priority cargo, or specialized equipment. It has been mathematically demonstrated that the modernization of mission support fleets—phasing in JetStars to replace obsolete airplanes—can save the government millions of dollars.

LOCKHEED

GEORGIA DIVISION • MARIETTA, GEORGIA

NAVY, DEPARTMENT OF THE:

SECRETARY OF THE NAVY, OFFICE OF THE:

(Pnt)

SECRETARY OF THE NAVY Hon W B Franke rm4E710 53131
Naval Aide Capt W P Mack USN rm4E710 54603
Marine Corps Aide Col E B Wheeler USMC rm4E710 55133
UNDER SECRETARY OF THE NAVY Hon Fred A Bantz rm4E664 ..53141
Naval Aide Capt J R Beardall USN rm4E664 52140
Marine Corps Aide Col G G Ryffel USMC rm4E664 52002
ASSISTANT SECRETARY OF THE NAVY (PERSONNEL AND RESERVE FORCES) Hon Richard Jackson rm4E800 72325
ASSISTANT SECRETARY OF THE NAVY (MATERIAL)
Hon Cecil P Milne rm2046 Mn Nv..63213
ASSISTANT SECRETARY OF THE NAVY (RESEARCH AND DEVELOPMENT) Hon James H Wakelin Jr rm4E728 56315
ADMINISTRATIVE ASSISTANT TO THE SECRETARY OF THE NAVY
Mr John H Dillon rm4E740..54278

EXECUTIVE OFFICE OF THE SECRETARY:

ADMINISTRATIVE OFFICE, NAVY DEPARTMENT
(MnNv)
Administrative Officer
Mr John H Walter rm0014 62221

NAVAL RESEARCH ADVISORY COMMITTEE (T-3)
Chairman Dr Frederick Seitz rm1818 64307

NAVY CONTRACT APPEALS PANEL, ARMED SERVICES BOARD OF CONTRACT APPEALS (T-3)
Chairman Mr C A Turmo rm1607 65386

OFFICE OF ANALYSIS AND REVIEW
Director Mr Wells H Thomsen rm4E824 79396

OFFICE OF THE COMPTROLLER (Pnt)
Comptroller Hon Fred A Bantz rm4E664 53141
Deputy Comptroller Rear Adm Lot Ensey rm4E774 53377

OFFICE OF THE GENERAL COUNSEL (Mn Nv)
General Counsel Mr Meritt H Steger rm2034 61296

OFFICE OF INDUSTRIAL RELATIONS (Pnt Anx #1) 701 Columbia Pike
Chief of Industrial Relations Rear Adm R E Cronin USN rm222 ...52003
Deputy Chief Capt H B Reece USN rm222 52275

OFFICE OF INFORMATION

CHIEF OF INFORMATION Rear Adm D F Smith Jr USN rm4E760..77391
Duty Officer week-days rm4E760 77391
Staff Duty Officer week-ends and holidays rm4E750 77391
Deputy Chief of Information Capt R W Alexander rm4E750 76724

OFFICE OF LEGISLATIVE AFFAIRS
Duty Officer—rm4D760 Saturday 0800-1230....77146
1230 Saturday 0830 Monday....53667
Chief of Legislative Affairs Rear Adm Robert E W Ward USN rm4D760..77146
Deputy Chief Capt W S Sampson USN rm4D760 77146

NAVY MANAGEMENT OFFICE
Chief Mr E D Dwyer rm0147 62176

OFFICE OF NAVAL MATERIAL (Mn Nv) Vice Adm G F Beardsley rm2010..63168
Vice Chief Rear Adm P W Snyder rm2010 63480
Special Advisor to Chief Mr W C Bulette rm2005A 61594

PROFESSIONAL SERVICES DIVISION Director W J Birthright rm2026..66406

SUPPLY PROGRAMS DIVISION Director Capt F M Lamkin rm2N05..66749

PROCUREMENT DIVISION
Director Capt J B Cline rm2022 65811

PRODUCTION DIVISION
Director Capt R K Anderson rm2016 61312

OFFICE OF NAVAL RESEARCH
(T-3 Building)

CHIEF OF NAVAL RESEARCH Rear Adm R Bennett rm1804 64911
Deputy & Asst Chief Capt J C Myers rm1804 62525
Deputy & Chief Scientist Dr T J Killian rm1814 64356
Naval Research Advisory Committee
Executive Secretary Mr O W Helm rm1818 64307
Counsel Mr A Pace rm1820 62680
Research Coordinator Dr M H Schrenk rm1815 64576
Special Asst for R&D Mr R K Buchanan rm1075 61732
Special Asst for Research Reserve Capt J W Jockusch rm1074..65812
Comptroller Mr R C Warsing rm2814 65668
Civilian Personnel & Services Division Director Mr E McCrensky rm1064..63542
Contract Division Director Cdr J J Shea rm2801 65321
Military Services Division
Director Capt H M Cocowitch rm1805..66016

ASSISTANT CHIEF FOR PATENTS AND PATENT COUNSEL FOR THE NAVY Capt R A Fitch rm1709 61100

ASSISTANT CHIEF FOR RESEARCH Capt H E Ruble USN rm2060..64049

NAVAL RESEARCH GROUP
Director Dr S Silverman rm2052 62135

EARTH SCIENCES DIVISION Director Dr L O Quam rm2034 67027

MATERIAL SCIENCES DIVISION Director Dr J H Shenk rm2042A..65030

PHYSICAL SCIENCES DIVISION Director Dr S Silverman rm2052..62135

MATHEMATICAL SCIENCES DIVISION Director Dr F D Rigby rm2719..64018

BIOLOGICAL SCIENCES DIVISION Director Dr R D Reid rm2063..64570

PSYCHOLOGICAL SCIENCES DIVISION Director Dr D D Smith rm2038..62435

NAVAL APPLICATIONS GROUP
Director Capt W H Keen rm2062A 61579

AIR PROGRAMS Capt R J Trauger rm2609 62600

SURFACE & AMPHIBIOUS PROGRAMS Cdr Donald C Tabb rm2602..64991

UNDERSEA PROGRAMS Cdr C B Momsen rm2615 64047

NAVAL ANALYSIS GROUP
Director Dr J D Wilkes rm2046 63567

ADVANCED PLANNING
Director Dr T L Saaty rm1506 63977

SYSTEMS ANALYSIS DIVISION
Surface Systems Mr R B Black rm1504 63496

EXTERNAL STUDIES DIVISION
Director Mr J R Marvin rm1510 66957

JUDGE ADVOCATE GENERAL, OFFICE OF NAVY:

(Pnt)

JUDGE ADVOCATE GENERAL
Rear Adm W C Mott USN rm4E844..54321

DEPUTY JUDGE ADVOCATE GENERAL
Capt Robert D Powers Jr USN rm4E843..71107

MARINE CORPS, U. S. HEADQUARTERS:

COMMANDANT Gen D M Shoup rm2004 42500

ASST COMMANDANT Lt Gen J C Munn rm2004 41201

CHIEF OF STAFF Lt Gen W M Greene Jr rm2010 42541
Deputy Chief of Staff (Plans) Maj Gen F L Wieseman rm2006..42503
Deputy Chief of Staff (R&D) Brig Gen B A Hochmuth rm2219 42871

Assistant Chief of Staff, G-1 Col C B Drake rm2212 42510

Assistant Chief of Staff, G-2 Col J F Carey rm2121 42443

Assistant Chief of Staff, G-3 Brig Gen L C Hudson rm2112 ..42540

Assistant Chief of Staff, G-4
Brig Gen H C Tschirgi rm2235 ..41969

DATA PROCESSING OFFICER Col L M Mason rm3021 41081

ADMINISTRATIVE DIVISION
Director Lt Col W O Cain Jr rm3021 42471

DIVISION OF AVIATION Dir Maj Gen A F Binney rm2018 41021

FISCAL DIVISION
Fiscal Director Brig Gen H Nickerson Jr rm3207 42590

INFORMATION, DIVISION OF
Director Col D R Nugent rm3202 42958

INSPECTION DIVISION
Inspector General Brig Gen J M Masters Sr rm2012 41533

POLICY ANALYSIS DIVISION
Director Col W P Baker rm2207 42430

RESERVE DIVISION OF
Director Brig Gen W T Fairbourn rm4209 41161

DIRECTOR OF WOMEN MARINES
Col Margaret M Henderson rm2217..42955

PERSONNEL DEPARTMENT Director Maj Gen A Larson rm1000..42533

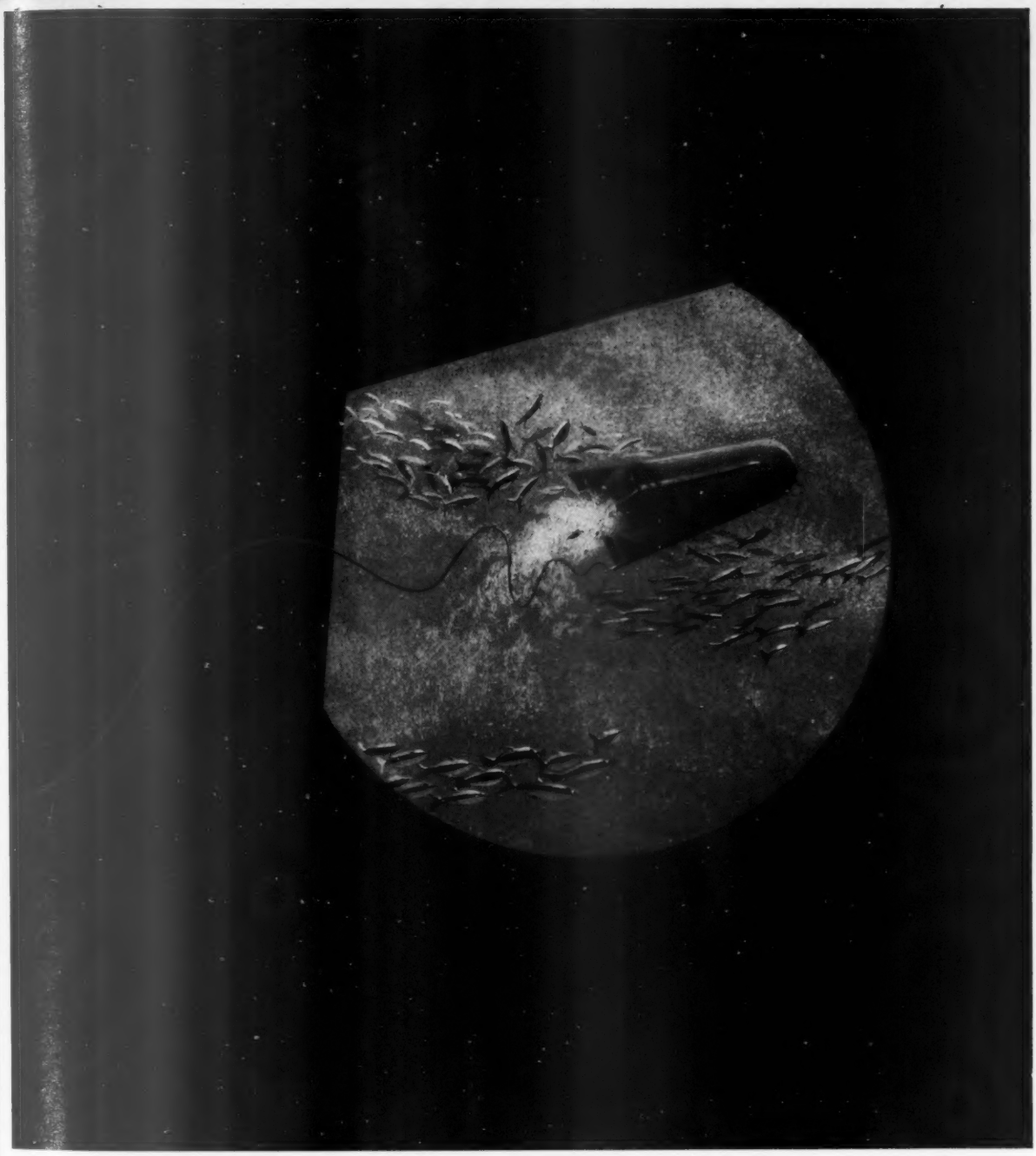
SUPPLY DEPARTMENT

QUARTERMASTER GENERAL Maj Gen C R Allen rm3000 42755

MATERIEL DIVISION
Director Col G D Morgan rm3008 42906

DIR DISBURSING DIVISION Col E D Graves rm4335 42558

DIRECTOR FACILITIES & SERVICES DIV Col H C Cooper rm3102..42580



RIGHT NOW, VITRO IS HELPING THE NAVY change torpedoes into underwater guided missiles. ■ Today, wire guided torpedoes are key ASW weapons. Wire-guidance and bearing-rider fire control are essentials in modern underwater weaponry. Both were developed at the Silver Spring Laboratory. ■ Vitro engineers were responsible for the first wire guided torpedo system and its subsequent developments. These technical specialists are now engaged in programs to apply advanced, original concepts to underwater ordnance.

Vitro

VITRO LABORATORIES/Division of Vitro Corporation of America/SILVER SPRING, MD.• WEST ORANGE, N.J.• EGLIN AFB, FLA.
SCIENTISTS AND ENGINEERS: JOIN THIS TEAM

DEPARTMENT OF THE NAVY

MEDICINE AND SURGERY, BUREAU OF:

Potx (23rd & E Sts., NW)

CHIEF OF BUREAU (THE SURGEON GENERAL) Rear Adm B W Hogan rm1112 Bgl..62277

DEPUTY & ASSISTANT CHIEF OF BUREAU Rear Adm E C Kenney rm1112 Bgl..62278

MILITARY SEA TRANSPORTATION SERVICE:

(T-8)

OFFICE OF COMSTS

COMSTS Vice Adm Roy A Gano USN rm1004 T-8 66649

DEPUTY COMMANDER & CHIEF OF STAFF Rear Adm J L Chew USN rm1101 T-8..69214

ASSISTANT CHIEF OF STAFF (ADMINISTRATION & MANPOWER) Assistant Chief of Staff Capt Lindsey Williamson USN rm1203 T-8..69227

INDUSTRIAL RELATIONS OFFICE Industrial Relations Officer Mr J F Acker Jr rm1210 T-8 69241

ASSISTANT CHIEF OF STAFF (OPERATIONS) Assistant Chief of Staff Capt H G Claudius USN rm2002 T-8..69398

MAINTENANCE & REPAIR OFFICE Maintenance & Repair Officer Capt T M Davis USN rm2206 T-8..69523

SUPPLY OFFICER Capt R L Betterton USNR rm2222 T-8 69545

COMPTROLLER Capt M Schliewe USN rm1317 T-8 69547

ASSISTANT CHIEF OF STAFF (PLANS) Assistant Chief of Staff (Plans) Capt E C Rider USN rm1103 T-8..69223

NAVAL OPERATIONS, OFFICE OF THE CHIEF:

Navy Department Duty Captain rm4D624 79930
OPNAV Duty Commander rm4A654 56566

CHIEF OF NAVAL OPERATIONS Adm Arleigh Burke rm4E636 56007
Executive Asst & Senior Aide Capt L R Geis rm4E644 55664

VICE CHIEF OF NAVAL OPERATIONS Adm J S Russell USN rm4E624..54098

ASSISTANT VICE CHIEF OF NAVAL OPERATIONS/DIRECTOR OF NAVAL ADMINISTRATION Rear Adm G R Donaho USN rm4E623..54337

HYDROGRAPHER OF THE NAVY RAdm E C Stephan USN rm200..153 Ext 328

NAVAL HISTORY DIVISION
Director Rear Adm E M Eller rm1210 Mn Nv 64443

OFFICE OF NAVAL COMMUNICATIONS

ACNO (Communications)
Director, Naval Communications Rear Adm Frank Virden USN rm4C677..55982
Deputy Director for Comm Capt R H Weeks USN rm4C677..56231
Deputy Director for NAVSECGRU Capt L R Schulg USN rm4C718..77918

ACNO (General Planning)
Director General Planning Group Rear Adm E P Holmes USN rm4D662..54380

ACNO (Intelligence) DIRECTOR, NAVAL INTELLIGENCE Rear Adm V L Lowrance USN rm5C572..53239

DEPUTY DIRECTOR, Intelligence Rear Adm S B Frankel USN rm5C572..52988

DEPUTY DIRECTOR, Security Capt H G Bowen Jr USN rm5C564..52543

ANTISUBMARINE WARFARE READINESS EXECUTIVE
ASW Read Exec Rear Adm L M Mustin rm4C628 74783
Dpty ASW Read Exec Capt Elliott Loughlin rm4C630 54671

LONG RANGE OBJECTIVES GROUP
Director Rear Adm H Rivero Jr USN rm4A724 52758

NAVAL INSPECTOR GENERAL Rear Adm J W Alles III USN rm2433 Arlex..43126

NAVAL WARFARE ANALYSIS GROUP
Director Dr J Steinhardt rm5D616 72216

PROGRESS ANALYSIS GROUP Director Capt W F Schlech Jr USN rm4C723..78361

DEPUTY CHIEF OF NAVAL OPERATIONS (AIR) Vice Adm R B Pirie rm4E394..52374

ACNO (Air) Rear Adm F A Brandley rm4E394 52629

ACNO (Marine Aviation) Maj Gen A F Binney rm 2018 Arlx ..41023

ASTRONAUTICS OPERATIONS DIVISION Director Capt R L Kibbe rm4D426..74441

AVIATION PLANS DIVISION Director Rear Adm F Massey rm4E380..71446

HEAD AVIATION PLANNING SYSTEMS & STATISTICS BRANCH Cdr G K Ebbe rm4E429 56784

HEAD AIRCRAFT PROGRAMS BRANCH Capt H K Laing rm4D371..56854

HEAD PERSONNEL PROGRAMS BRANCH Capt C S Walline rm4E359..54310

HEAD AVIATION REQUIREMENTS BRANCH Capt H C Bridgers rm4E356..74201

HEAD PLANNING REQUIREMENTS BRANCH Capt P N Charbonnet Jr rm4D421..75060

HEAD WAR PLANS BRANCH Capt R W Windsor Jr rm4E375 55295

AVIATION TRAINING DIVISION
Director Captain I L Dew rm4D418 53409

FLIGHT SERVICES DIVISION Director Capt Frank Upham rm4E408..76217

MARINE AVIATION DIVISION
Director Maj Gen A F Binney rm2018 Arlx 41023

DEPUTY CHIEF OF NAVAL OPERATIONS (Development) Vice Adm J T Hayward USN rm5D600 75533

ACNO (Development) Rear Adm C B Martell USN rm5D580 74532

Advanced Technology Group
Director Capt L L Shock USN rm5C715 73907

ASTRONAUTICS DEVELOPMENT DIVISION
Director Capt W E Berg USN rm5D572 53971

ANTISUBMARINE WARFARE PROGRAMS DIVISION
Director Capt W H Groverman USN rm5D580 79007

TECHNICAL ANALYSIS AND ADVISORY GROUP
Director Dr R O Burns rm5E581A 79777

OFFICE OF DIRECTOR, DEVELOPMENT PLANNING
Director Rear Adm L D Coates USN rm 5D564 52905

PLANS AND BUDGET DIVISION
Director Capt R J Fabian USN rm5D560 52920

STRIKE WARFARE PROGRAMS DIVISION
Director Capt H H Larsen USN rm4D435 74250

ANTIAIR WARFARE PROGRAMS DIVISION
Director Capt M H Austin USN rm5E631 72296

SUPPORTING PROGRAMS DIVISION
Director Capt P L Folsom rm5E677 52821

STRIKE WARFARE WEAPONS SYSTEMS DIVISION
Director Capt H H Larsen USN rm5C721 74250

ATOMIC ENERGY DIVISION
Director Capt J N Shaffer rm4C516 52143

OFFICE OF DEVELOPMENT PROGRAMS
Director Rear Adm J A Jaap USN rm4E436 52865

DEPUTY CHIEF OF NAVAL OPERATIONS (FLEET OPERATIONS AND READINESS) Vice Adm W M Beakley USN rm4E552....77469

ASSISTANT CHIEF OF NAVAL OPERATIONS (FLEET OPERATIONS AND READINESS) Rear Adm R Mason USN rm4E552 54611

ASW/SS WARFARE DIVISION
Director ASW/SS Warfare Division Rear Admiral L P Ramage rm4C600..54127

ELECTRONIC WARFARE DIVISION
Director Electronic Warfare Division Capt J D Crowley rm4C556..76115

FLEET OPERATIONS DIVISION

ACNO (Fleet Ops) & Director Fleet Operations Division RAdm A G Ward Jr USN rm4D600 76033

OPERATIONS EVALUATION GROUP (rm5D616)
Director Dr J Steinhardt 72215

STRIKE WARFARE DIVISION
Director Strike Warfare Division Capt E R Eastwold rm4C548..54331

PROGRAMS & PLANS DIVISION
Director Programs and Plans Division Capt C J Mackenzie rm4D563..74602

DEPUTY CHIEF OF NAVAL OPERATIONS (Logistics) Vice Adm John Sylvester rm4E606..52154

ACNO (Logistics) Rear Adm Miles H Hubbard rm4E606 55183

LOGISTIC PLANS DIVISION
Director RAdm C O Triebel rm4B548 54001
Asst Director Capt P E Emrick rm4B542 75837

MATERIEL AND BUDGET DIVISION
Director RAdm J W Crumpacker SC USN rm4B541 56071

SHIP CHARACTERISTICS DIVISION
Director & Chmn. SC Board RAdm R H Speck rm4A526 76897

SHIPS MATERIAL READINESS DIVISION
Director Rear Adm L A Bryan rm4A486 77090

SHORE STATION CONSTRUCTION AND MAINTENANCE DIVISION
Director RAdm H A Renken rm4B473 52420

DEPUTY CHIEF OF NAVAL OPERATIONS (PERSONNEL & NAVAL RESERVE) Vice Adm W R Smedberg III rm4E526..55588

ACNO (Personnel) Rear Adm M F D Flaherty rm4E522 55517

ACNO (Naval Reserve) Rear Adm J A Tyree Jr rm4E466 52757

DEPUTY CHIEF OF NAVAL OPERATIONS (PLANS AND POLICY) Vice Adm U S G Sharp Jr USN rm4E588..53707

Now! More Pan Am Clipper Cargo Flights every day, every week!

Pan Am ups cargo capacity nearly 100% with more Jets, more cargo-and-passenger planes... and more all-cargo planes than any other overseas airline!

It's the most *convenient* cargo schedule you'll find. With more flights! More Jets! Giant new DC-7F Clipper* Merchantmen, the world's biggest and fastest all-cargo planes! More and more reasons why your product is always sure to get aboard faster, *abroad* faster by Pan Am—and today, more often than ever, at less than the total cost for surface transportation! Want speed? Want space? *And savings!* Call your cargo agent, freight forwarder or Pan Am office today. Get your shipment *aboard today—abroad tomorrow.*

Ask about special low military rates to Europe and the Middle East and quantity discounts on shipments to the Pacific.

*Trade Mark, Reg. U. S. Pat. Off.

See what you get—inbound and outbound!

DEPARTMENT OF THE NAVY

FOREIGN MILITARY ASSISTANCE DIVISION
Director Rear Adm A H Taylor rm4E534 72411

POLITICO-MILITARY POLICY DIVISION
Director Rear Adm J M Lee USN rm4E572 52453

STRATEGIC PLANS DIVISION
Director Rear Adm C V Ricketts rm4E566 55620

NAVAL PERSONNEL, BUREAU OF:

CHIEF OF NAVAL PERSONNEL Vice Adm W R Smedberg III rm2072..41101

DEPUTY & ASSISTANT CHIEF OF NAVAL PERSONNEL Rear Adm A E Loomis rm2070..42243

CHIEF OF CHAPLAINS Rear Adm G A Rosso rmG803 42347

ASSISTANT CHIEF FOR EDUCATION AND TRAINING Capt J A Lark rm3077..41000

ASSISTANT CHIEF FOR FINANCE (Comptroller) Capt J E Minter rm2635..42021

ASSISTANT CHIEF FOR PROPERTY MANAGEMENT Capt G F Frauenheim rm2636..42842

ASSISTANT CHIEF FOR NAVAL RESERVE AND NAVAL DISTRICT AFFAIRS Capt J S Fahy rm1502 41257

ASSISTANT CHIEF FOR PERSONNEL CONTROL Rear Adm F J Brush rm2713..41291

DEPUTY ASSISTANT CHIEF FOR PERS CONTROL Capt D Mayberry rm2709..42234

ASSISTANT CHIEF FOR PERFORMANCE Capt H S Schwab rm1511..41487

ASSISTANT CHIEF FOR PLANS Rear Adm B J Semmes Jr rm2064..42979

ASSISTANT CHIEF FOR RECORDS Capt O A Finley rm3054.....42767

ASSISTANT CHIEF FOR MORALE SERVICES Capt F R Whitby Jr rm1803A..42708

ASSISTANT CHIEF FOR WOMEN Capt W R Quick (W) rm1609..42411

NAVAL WEAPONS, BUREAU OF

(MnNv)
Duty Officer rm4239 61402
(Weekdays 1615-0800 only; Sat 0800-0800; Sun. & Holidays 0800-0800)
Directory Information rm3813 .....62025, 62220
Visit Control rm1084 .....63040, 64359

CHIEF OF BUREAU Rear Adm Paul D Stroup rm2082 62465
Executive Assistant Cdr L G Yeich rm2083 62851

DEPUTY CHIEF Rear Adm W A Schoech rm2082 62430

DIRECTOR SPECIAL PROJECTS Rear Adm W F Raborn rm3004 Mun Bg..61562

COMPTROLLER Cdr S H Ivison Jr USN rm2913 64241

INSPECTOR GENERAL AND ASSISTANT CHIEF FOR ADMINISTRATION Rear Adm H P Weatherwax rm2908.....61611

INFORMATION SERVICES OFFICER Mr E Collins rm2000 Mun Bg 61459

ASSISTANT CHIEF FOR PROGRAM MANAGEMENT Rear Adm C T Booth rm3074..64701

ASSISTANT CHIEF FOR PACIFIC MISSILE RANGE & ASTRONAUTICS Rear Adm T F Connolly rm3066 62661

OPERATIONAL COORDINATION & FACILITIES DIVISION Director Capt G T Swiggum rm3708..64983

OPERATIONAL RESOURCES DIVISION Director Mr R J McCaffery rm3714..64965

RANGE DEVELOPMENT & REQUIREMENTS DIVISION rm3710..61035

ASSISTANT CHIEF FOR PROGRAM & MANAGEMENT PLANS Mr G O Pehrson rm3083..65231

PROGRAM PLANS & REVIEW OFFICER Capt D C Rumsey II rm3082..62508

MANAGEMENT PLANS OFFICER Capt R H Fagan rm3814.....62509

STATUS & REVIEW OFFICER Capt R C Millard rm3078 63546

DIRECTOR, STRIKE WARFARE PROGRAMS Capt J H Boyum rm3070..62643

DIRECTOR, ANTI-SUBMARINE WARFARE PROGRAMS Capt C E Healy rm3068..61704

DIRECTOR, ANTI-AIR WARFARE PROGRAMS Capt F A McKee rm3801..62823

DIRECTOR, SUPPORT SYSTEMS PROGRAMS Capt R W Leeman rm3821..61537

DIRECTOR LOGISTIC PROGRAMS Capt J P Sager rm3826 63380

ASSISTANT CHIEF FOR RESEARCH, DEVELOPMENT, TEST AND EVALUATION Capt E A Ruckner rm2W67 W Bg 63343
Executive Director Capt P F Bedell rm2W67 W Bg 63344

PLANS OFFICER Capt R M Tunnell rm2W54 W Bg 67359

PROGRAMS AND BUDGET OFFICER Capt J D Hyerle rm2W64 W Bg..65492

SERVICES OFFICER Capt L A Whitney rm2W65 W Bg 64805

WEAPON SYSTEMS ANALYSIS OFFICER F. M. Gloeckler rm2W88 W Bg..64887
Asst Weapon Systems Analysis Officer F E Ellis rm2W91 W Bg..65840

RESEARCH DIVISION Director Mr A Wertheimer rm2W79 W Bg..64294

MATERIALS DIVISION Director Mr N E Promisel rm2W98 W Bg..63279

EVALUATION DIVISION Director Mr G A Spangenberg rm2W73 W Bg..62627

ENGINEERING DIVISION Director Mr F J Schiavi rm4541 Mun Bg..66272

AIRBORNE EQUIPMENT DIVISION Capt R C Starkey rm1W39 W Bg..63763

AIRCRAFT OFFICER Capt L S Chambers rm2W61 W Bg 62265

POWER PLANT DIVISION Director Capt E L Knapp rm2W01 W Bg..63781

AVIONICS DIVISION Director Capt T M Adams USN rm1W99..64324

AIRFRAME DESIGN DIVISION Director Capt B K Beaver rm1W56 W Bg..63866

MISSILE OFFICER Capt C T Doss rm2W50 W Bg 61613

MISSILE PROPULSION DIVISION Director Cdr M O Slater rm2225 Mun Bg..63330

MISSILE ORDNANCE DIVISION Director Cdr H H Hassenfratz rm2230 Mun Bg..65504

MISSILE WEAPONS CONTROL DIVISION Director Capt J P Jamison rm2317 Mun Bg..63160

MISSILE GUIDANCE AND AIRFRAME DIVISION Director Capt R W Paine Jr rm2341 Mun Bg..63363

MISSILE LAUNCHER AND GUN DIVISION Director Cdr R B Terrill rm2310 Mun Bg..64017

ASW OFFICER Capt W C Abhau rm2149 Mun Bg 65298

ASW WEAPONS DIVISION Director Cdr L H Keator rm2143....63554

UNDERWATER ORDNANCE DIVISION Director Cdr W G Puryear rm2330..65575

ASW DETECTION & CONTROL DIVISION Director Cdr J Q Rasmussen rm2121 Mun Bg..63925

SHIP INSTALLATIONS OFFICER Capt A E Paddock rm3341 Mun Bg..62692

SHIP AERONAUTICS DIVISION Director Capt H E McNeely rm3341 Mun Bg..63732

WEAPONS INSTALLATIONS DIVISION Director Cdr R E Oliver rm2336 Mun Bg..62003

SATELLITE AND PAYLOAD DIVISION Director Cdr W L Clark rm3718..62890

BOOSTER & SPACE VEHICLE DIVISION Director Mr W C Schneider (Actg) rm3718..63761

ASSISTANT CHIEF FOR CONTRACTS Rear Adm E F Metzger rm0301..62436

SMALL BUSINESS OFFICE Mr J F Lenahan rm0310 64972

PLANS AND PROGRAMS DIVISION Director Mr J A Catoe rm0425..65879

PURCHASE DIVISION Director Capt T Washington Jr rm0347.....62905

SERVICES DIVISION Director Mr G A Fischetti rm3149 66672

ASSISTANT CHIEF FOR PRODUCTION AND QUALITY CONTROL rm0031..66225
Executive Director Capt P H Harrington rm0034 66319

QUALITY CONTROL DIVISION Director Capt J E Hoch rm0304..61816

PRODUCTION OFFICER Copt M P Comulada (Actg) rm0038 63805

AIRCRAFT DIVISION Director Capt V E Telg rm3222 66035

MISSILES, ASTRONAUTICS AND AMMUNITION DIVISION Director Capt C D Mott rm3110..67735

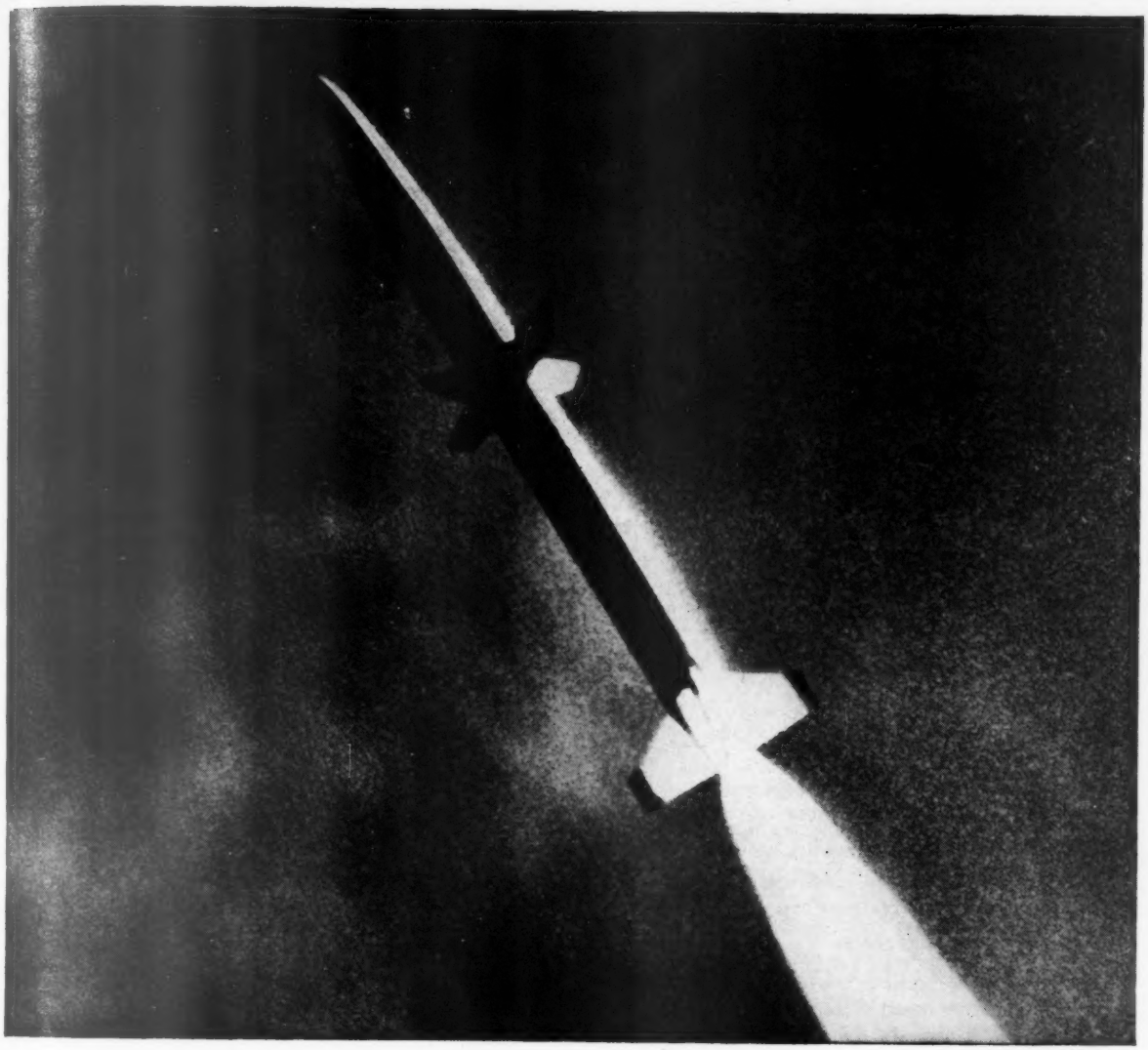
SHIPBOARD EQUIPMENT DIVISION Director Cdr J C Donahue rm3005..64462

INDUSTRIAL PLANNING OFFICER Capt W M Hawkes rm0401....64159

ASSISTANT CHIEF FOR FLEET READINESS Rear Adm J E Dodson rm0449..65977
Executive Director Capt J R Middleton rm0449 66101

WEAPONS ENGINEERING OFFICER Capt W O Powell Jr rm4247..62427

AIRCRAFT ENGINEERING DIVISION Director Capt L E Larson rm4245..64468



BLUE WATER

BRITAIN'S SECOND-GENERATION ARMY MISSILE

Blue Water, a Corps level tactical surface-to-surface weapon,
is being developed for the British Army by English Electric Aviation Ltd.
at Stevenage, Hertfordshire, England.

BLUE WATER *has:*

** Full mobility by ground and air * Inertial guidance * High accuracy * Rapid fire power*
** A solid fuel motor * Speed into action with minimum vehicles and men*

ENGLISH ELECTRIC AVIATION LIMITED

GUIDED WEAPONS DIVISION · LUTON · STEVENAGE · WOOMERA

MEMBER COMPANY OF BRITISH AIRCRAFT CORPORATION

DEPARTMENT OF THE NAVY

MISSILE ASTRONAUTICS & AMMUNITION ENGINEERING DIVISION Director Capt W W Witter rm4215 67463

SHIPBOARD EQUIPMENT ENGINEERING DIVISION Director Capt L C Klingaman rm4226..62013

AIRCRAFT GROUND SUPPORT DIVISION Director Capt N D Hodson rm4342..64737

MAINTENANCE MANAGEMENT OFFICER Cdr D H Swain rm0439..65665

WEAPONS SAFETY DIVISION Director Mr H M Roylance rm0442..66735

TRAINING AND PERSONNEL DIVISION Director Cdr D E Laird rm0435..63808

PLANS AND POLICIES DIVISION Director Cdr A R Boyle rm0434..67471

TECHNICAL DIRECTIVE DIVISION Director Miss R Christie (Actg) rm4139..65078

PLANT MANAGEMENT OFFICER Capt F E Rogozienski rm4134..62585

WORKLOAD REQUIREMENT AND SCHEDULES DIVISION Director Cdr F Humphreys rm4143..64836

RESOURCES AND ANALYSIS DIVISION Director Cdr E E Scull rm4135..63667

MANAGEMENT SYSTEMS DIVISION Director Cdr O A Soli rm4128..63653

SUPPLY MANAGEMENT OFFICER Capt H L Beardsley rm4113..65528

PROGRAMS AND PROCEDURES DIVISION Director Cdr J D Custer rm4111..61769

INVENTORY CONTROL DIVISION Director Cdr K M Beyer rm4112..64010

OPERATIONS MANAGEMENT DIVISION Director Cdr R B Jeppson rm4116..65432

QUALITY EVALUATION OFFICER Cdr G G Estes Jr rm4121 61886

QUALITY ASSURANCE OFFICE (Bg 28, NWP) Capt W R Lipscomb 28-2..142 Ext 337

QUALITY EVALUATION DIVISION Director Cdr G G Estes Jr rm4121..61886

PHOTOGRAPHIC MANAGEMENT OFFICER (Bg T-70, NS) Capt E L Keim rm203..1215 Ext 381

METEOROLOGICAL MANAGEMENT OFFICER Capt S W Betts rm210..1215 Ext 368

ASSISTANT CHIEF FOR FIELD SUPPORT RAdm W E Ellis rm2026 Mun Bg..61088
Executive Director Capt V F Casey rm2026 Mun Bg 65869

REPAIRS & IMPROVEMENTS DIVISION Director Cdr Z C Trzyna rm2422 Mun Bg..66301

REAL ESTATE & HOUSING DIVISION Director Mr H M De Wilde Jr rm2029 Mun Bg..63377

EQUIPMENT OFFICER Cdr R P Chase rm2415 Mun Bg 64275

GENERAL EQUIPMENT DIVISION Director Mr B V Frank rm2421 Mun Bg..64842

GROUND ELECTRONICS DIVISION Director Cdr R P Chase rm2415 Mun Bg..64275

MANAGEMENT OFFICER Capt R E Rau rm2401 Mun Bg 61274

FINANCIAL MANAGEMENT DIVISION Director Mr H X Roche rm2401 Mun Bg..61682

MANAGEMENT SYSTEMS DIVISION Director Mr G E W Olson rm2025 ..61843

SPECIAL PROJECTS OFFICE (Mun Bg)
Information (Military and Civilian) 67101

DIRECTOR, SPECIAL PROJECTS Rear Adm W F Raborn rm3004..61562
Deputy Director Capt F A Chenault rm3001 65259

ADMINISTRATIVE DIVISION Director Mr V G Domenick rm3015 ...67154

PLANS AND PROGRAMS DIVISION Director Mr H McCullough rm3101..67221

TECHNICAL DIVISION Director Capt Levering Smith rm3204 67111

SHIPS, BUREAU OF:

(Mn NV) General Information 65498

CHIEF OF BUREAU Rear Adm R K James rm3046 62058
Deputy & Asst Chief of Bureau Rear Adm R L Moore Jr rm3048..63391

COORDINATOR OF SHIPBUILDING, CONVERSION AND REPAIR Rear Adm R K James rm3046 62058

ASSISTANT CHIEF FOR PLANS AND ADMINISTRATION AND INSPECTOR GENERAL Rear Adm W H Leahy rm3062 62049

COMPTROLLER Capt J J Fee rm2408 62567

CONTRACT DIVISION
Director of Contracts Capt G C Wells rm3054 62112

ASSISTANT CHIEF OF BUREAU FOR TECHNICAL LOGISTICS Director RAdm Floyd B Schultz rm3026..61714

ASSISTANT CHIEF FOR FIELD ACTIVITIES RAdm M J Lawrence rm3036..65800

ASST CHIEF OF BUREAU FOR NUCLEAR PROPULSION Vice Adm H G Rickover rm2N69..62337

ASST CHIEF OF BUREAU FOR RESEARCH & DEVELOPMENT Capt Edw J Fahy rm3020..63240

ASST CHIEF OF BUREAU FOR DESIGN SHIPBUILDING & FLEET MAINTENANCE Rear Adm J M Farrin rm3032 63585

SUPPLIES AND ACCOUNTS, BUREAU OF:

(Arlx)
General Information Numbers
Duty Officer (1630 to 0800 only on weekdays; 0800 Saturdays to 0800 Mondays; Holidays, 0800 to 0800 the following day) rm1315A Arlx 41667

CHIEF OF BUREAU Rear Adm J W Boundy rm0026 Mn Nv 63411
Deputy & Asst Chief of Bureau
Rear Adm T A Long rm0026 Mn Nv..63411

COMPTROLLER OF BU SANDA Capt H H Hunt rm2147 Mn Nv..62555

DIRECTOR OF INDUSTRIAL RELATIONS W J Hurd rm1044 Arlx..41536

DIRECTOR OF MANAGEMENT ENGINEERING Capt Fred B Stewart rm2523 Arlx..42862

DIRECTOR OF MUTUAL SECURITY PROGRAMS Capt J T Mathews Jr rm2303 Arlx..42528

DIRECTOR OF SUPPLY CORPS PERSONNEL Capt K R Wheeler rm2050 Arlx..41942

DIRECTOR OF PLANNING Capt B H Bieri Jr rm2002 Mn Nv ..63682

ASSISTANT CHIEF FOR PURCHASING Capt T H Bell rm1032 T-3..62136

ASSISTANT CHIEF FOR RESEARCH AND DEVELOPMENT Capt W W Gay Jr rm1422 T-3..67833

ASSISTANT CHIEF FOR SUPPLY MANAGEMENT RAdm H J Goldberg rm0205 Mn Nv..67457

FLEET BALLISTIC MISSILE PROGRAM DIVISION Director Capt Robert A Williams rm3216 Mun Bg..63471

FLEET OPERATIONS DIVISION Director Capt D F Logan rm0222 Mn Nv..64719

ASSISTANT CHIEF FOR TRANSPORTATION AND FACILITIES Capt T A Brown rm0237 Mn Nv..61118

YARDS AND DOCKS, BUREAU OF:

(Y&D Annex, Memorial Drive & "H" Road
Arlington, Virginia)
Receptionist & Information Lobby 77139

CHIEF OF BUREAU Rear Adm E J Peltier rm2A59 63281

DEPUTY & ASST CHIEF OF BUREAU Capt P Corradi rm2A59 63281

SR MEMBER CONTRACT AWARD & REVIEW BOARD Capt C E Spellman rm2A66..63281

INSPECTOR GENERAL Rear Adm N J Drustrup rm2A69 53625

ASSISTANT FOR MILITARY FUNCTIONS Cdr S R Smith rm2A79..77134

ASST FOR POLICY PLANNING Capt F F Kravath rm2A56 53461
Cdr D M Rait rm2A54 53461

ASST CHIEF FOR ADMINISTRATION & COMPTROLLER Capt A C Husband rm1A75..77381

MANAGEMENT ENGINEERING STAFF Mr O Benesh rm1A99 ...75239

ADMINISTRATION DIVISION Cdr G G Cornwell Jr Director rm1A78..71180

FINANCIAL MANAGEMENT DIVISION Mr J W Cochrane Director rm2A41..62403

MANAGEMENT ANALYSIS & REVIEW DIVISION Mr W G Halstead Director rm2A45..78286

SHORE ESTABLISHMENT DIVISION Cdr W F Cline Director rm1A85..78700

ASST CHIEF FOR PLANNING AND DESIGN Capt L E Root rm2B70..78171

ENGINEERING DIVISION Capt H Stevens Jr Director rm2C53....77274

LOGISTICS PLANNING DIVISION Cdr L R Larson Director rm2C15..73440

DISASTER CONTROL DIVISION LCdr W J Francy Director rm2B81..78402

RESEARCH & DEVELOPMENT DIVISION Capt L N Saunders Jr Director rm2B65..77238

ASST CHIEF FOR CONSTRUCTION Capt H C Shaid rm1A47..63048 & 74755

CONTRACTS DIVISION Mr B J Katz Director rm1A50 75480

CONTRACTOR LABOR RELATIONS BRANCH Mr T L Jones rm2A84..71209

Self-sustained transport at work in the Congo

U. S. Air Force Lockheed C-130 Hercules

The recent crisis in the Congo has once again proved that the self-sustained aircraft is of vital importance in transporting cargo and passengers to and from landing fields where no ground support equipment exists.

The USAF Lockheed C-130 Hercules is designed to land and take off from extremely short runways carrying heavy loads of cargo or passengers. Equipped with an AiResearch gas turbine and starting system, the C-130 is entirely self-sufficient and can operate from the heat of the Congo to the cold of the Antarctic without the need of ground support equipment.

AiResearch gas turbine compressor GTC85 is built into the left wheel well of the C-130.

AiResearch air turbine starter ATS100 is installed on each of C-130's four turboprop engines.

Please direct inquiries to Phoenix Division.

THE GARRETT CORPORATION

AiResearch Manufacturing Divisions

Los Angeles 45, California • Phoenix, Arizona

Systems and Components for: AIRCRAFT, MISSILE, SPACECRAFT, ELECTRONIC, NUCLEAR AND INDUSTRIAL APPLICATIONS

PROGRAM MANAGEMENT STAFF Cdr J V Bartlett rm1A45..74135

SPEC PROJ & COORDINATION STAFF Mr T R Shaid (Actg) rm1A37..74134

WEAPONS FACILITIES DIVISION Cdr W C Fales Director rm1A1..54723

SHIPS FLEET, & COMMUNICATIONS CONSTRUCTION DIVISION Cdr G A Busbee Director rm1A18..56651

MEDICAL, PERSONNEL, MARINE CORPS, RESEARCH, SUPPLY & PETROLEUM CONSTRUCTION DIVISION Cdr J F Callahan Director rm1A36..53940

ASST CHIEF FOR MAINTENANCE AND MATERIEL Capt H N Wallin rm2A87..78394

MAINTENANCE DIVISION Cdr H J Johnson Director rm1A109..75143

MATERIEL DIVISION Mr N R Fortier Director rm2A103 52013

TRANSPORTATION & EQUIPMENT MANAGEMENT DIVISION Mr R R Elder Director rm2A95..55235

UTILITIES DIVISION Cdr J M Daniels Director rm1A11 73321

ASSISTANT CHIEF FOR REAL ESTATE Capt W M Heaman rm2A1..77218

ACQUISITION DIVISION LCdr R F Dambra Director rm2A19....76424

REAL PROPERTY MANAGEMENT & DISPOSAL DIVISION LCdr B W Van Leer Director rm2A12..52352

REAL ESTATE SERVICES DIVISION Mr H E Hegarty Director rm2A21..54148

ASSISTANT CHIEF FOR HOUSING Capt R C MacDonald rm1C13..54213

AIR FORCE, DEPARTMENT OF THE:

SECRETARY OF THE AIR FORCE, OFFICE OF THE:

(Pnt)

SECRETARY OF THE AIR FORCE Hon Dudley C Sharp rm4E871..77376
Executive Asst Col J W Baer rm4E871 77376

UNDER SECRETARY OF THE AIR FORCE Hon Jos V Charyk rm4E871..71361
Executive Col C J Butcher rm4E886 76572

ASSISTANT SECRETARY OF THE AIR FORCE (Financial Management) Hon Lyle S Garlock rm4E978 72302

ASSISTANT SECRETARY OF THE AIR FORCE (Materiel) Hon Philip B Taylor rm4E856..78147

ASSISTANT SECRETARY OF THE AIR FORCE (Research & Development) Hon Courtland D Perkins rm4E962..76361

SPECIAL ASSISTANT FOR INSTALLATIONS John M Ferry rm4D866..75615

SPECIAL ASSISTANT (Manpower, Personnel & Reserve Forces) Lewis S Thompson rm4E968..56383

ADMINISTRATIVE ASSISTANT J J McLaughlin rm4D887 56309

GENERAL COUNSEL DEPT OF THE AIR FORCE M Golden rm4E961..56996

OFFICE OF LEGISLATIVE LIAISON
Director Maj Gen T C Musgrave Jr rm4D919 78153

OFFICE OF MISSILES AND SATELLITE SYSTEMS
Director Brig Gen R D Curtin rm4C968 78675

OFFICE OF INFORMATION
Director Maj Gen A H Luehman rm4D918 76061
Deputy Director Brig Gen E B LeBailly rm4D918 73329

DIRECTOR OF THE SAMOS PROJECT Brig Gen R E Greer rm4C968..78675

CHIEF OF STAFF, UNITED STATES AIR FORCE

(Pnt)

Information (General) 52246

OFFICE CHIEF OF STAFF

Chief of Staff Gen T D White rm4E929 79225
Executive Col R B Allison rm4E929 79225

Office of the Chief Scientist
Chief Scientist Dr A H Flax rm4E324 77844

Vice Chief of Staff Gen C E LeMay rm4E936 79333

Assistant Vice Chief of Staff Maj Gen R M Montgomery rm4E936..52606

THE AIR FORCE COUNCIL
Secretary Col D C Shultis rm5C938 79175

OPERATIONS ANALYSIS OFFICE
Chief Operations Analysis C L Zimmerman rm5C267 52383

SECRETARY OF THE AIR STAFF Col R A Rowland rm4E948 79296

ASSISTANT CHIEF OF STAFF, INTELLIGENCE
Asst Chief of Staff for Intelligence Maj Gen J H Walsh rm4A932..55613

Dep Asst Chief of Staff for Intelligence (Actg) Col L A Hall rm4A932..72548

ASSISTANT CHIEF OF STAFF FOR RESERVE FORCES

Assistant Chief of Staff for Reserve Forces Maj Gen R E L Eaton rm5C916..75547

Deputy for Angus Maj Gen W P Wilson rm2E330 72430

Deputy for Air Force Reserve .....rm5C920..52720

DIRECTORATE OF ADMINISTRATIVE SERVICES
Information rm5A266 52246
Director Col J L Tarr rm5A266 55789

INSPECTOR GENERAL
Inspector General Lt Gen J F Carroll rm4E1072 74879

Deputy Inspector General for Security Brig Gen J M Breit rm4E1084..74351

OFFICE OF THE JUDGE ADVOCATE GENERAL

The Judge Advocate General Maj Gen A M Kuhfeld rm5C333..54747
Asst Judge Advocate General Maj Gen M R Tidwell Jr rm5C325..75906

SCIENTIFIC ADVISORY BOARD
Chairman Lt Gen D L Putt rm4A346 72659
Military Director Lt Gen R C Wilson rm4A346 72659

SURGEON GENERAL (T-8)
The Surgeon General Maj Gen O K Niess rm2718 69315
Deputy Surgeon General Maj Gen J K Cullen rm2718 69316

COMPTROLLER OF THE AIR FORCE

Comptroller Lt Gen W D Eckert rm4E126 74774
Deputy Comptroller W B Petty rm4E126 74464
Auditor General Maj Gen W P Farnsworth rm4D154 76281

DIRECTOR OF ACCOUNTING & FINANCE
Director Brig Gen J F Delaney rm4E110 72280

DIRECTOR OF BUDGET
Director Maj Gen R J Friedman rm4D129 79774

DIRECTOR OF MANAGEMENT ANALYSIS
Director Col E D Reynolds rm4D161 75311

DIRECTOR OF STATISTICAL SERVICES
Director Col G H Krieger rm1D160 74417

DEPUTY CHIEF OF STAFF, DEVELOPMENT

DCS/Development Lt Gen R C Wilson rm4E324 77151
Asst DCS/Development Maj Gen V R Haugen rm4E324 76518
Asst DCS/Development for Nuclear System Brig Gen I L Branch rm5E275..52564
Executive Col W E Gernert rm4E324 76957

Asst for Security J J Liebling rm4E275 75300
Asst for Foreign Development Col W F Chapman rm5E283 74000

DIRECTOR OF DEVELOPMENT PLANNING
Director Maj Gen W B Keese rm4E318 77340
Deputy Director Col F N Moyers rm4E318 76774

DIRECTOR OF DEVELOPMENT PROGRAMMING
Director Col J R V Dickson rm4C327 76915

DIRECTOR OF RESEARCH AND TECHNOLOGY
Director Brig Gen R L Wassell rm4B341 52147
Deputy Director Col J V Hearn Jr rm4B341 78833

DIRECTOR OF SYSTEMS DEVELOPMENT
Director Maj Gen M C Demler rm4E346 77304
Deputy Director Brig Gen R D Curtin rm4E346 71895

DEPUTY CHIEF OF STAFF, MATERIEL

Deputy Chief of Staff Materiel Lt Gen M E Bradley Jr rm4E262..53153
Asst DCS/Materiel Maj Gen W O Senter rm4E262 56236
Executive Lt Col Robt Hogg rm4E262 55590

ASSISTANT FOR MUTUAL SECURITY
Asst for Mutual Security Maj Gen D R Hutchinson rm5C130 52842
Deputy Col W K McNown rm5C130 54020

DIRECTOR OF LOGISTICS PLANS
Director Brig Gen P L Barton rm4E288 76922
Deputy Col L E Johnson Jr rm4E288 71429

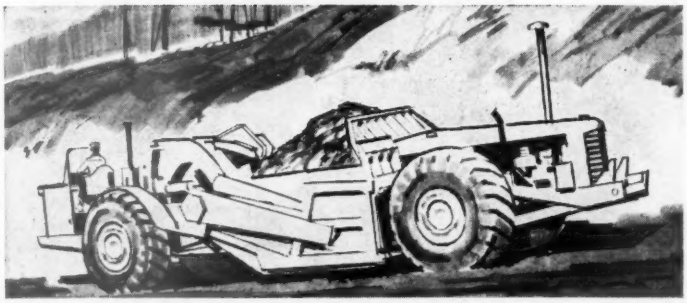
DIRECTOR OF MAINTENANCE ENGINEERING
Director Maj Gen T A Bennett rm4A264 55356
Deputy Col R R Barden rm4A264 72932

DIRECTOR OF MATERIEL PROGRAMS
Director of Materiel Programs Brig Gen C W Andrews rm4E276..78197
Deputy Director Col J R Daniel rm4E276 78197

DIRECTOR OF PROCUREMENT & PRODUCTION
Director Col M C Smith rm4D257 56332
Dep Director Col C G Esau rm4D257 75521

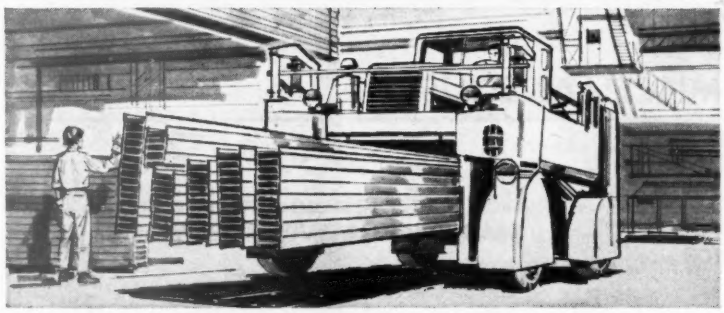
DIRECTOR OF SUPPLY & SERVICES
Director Maj Gen C J Bondley Jr rm4B289 54900
Deputy Director Col J A Mullins rm4B289 52775

ALLISON
smooths out starts
TORQMATICALLY



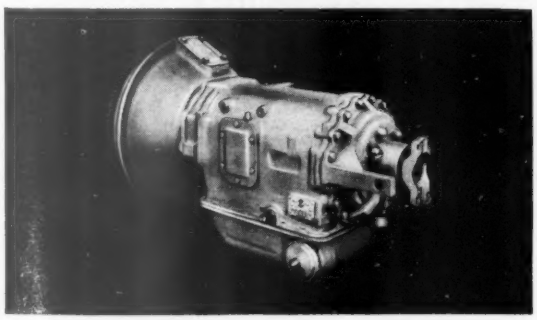
IN 14-YARD SCRAPERS

"Twin Power"—made possible by twin Allison CT-3340 TORQMATIC DRIVES in this Euclid TS-14 scraper – makes every operation smoother. Production is as much as 100% higher, cost per yard 50% less, than for scrapers pulled by tractors.



IN STRADDLE CARRIERS

"Easy Does It" for 30-Ton Loads—Equipped with an Allison CT-3340 TORQMATIC DRIVE, this Gerlinger Material Handler starts 20- and 30-ton loads slick as a whistle for an Eastern steel producer. Unit works 24 hours a day, five days a week, has cut steel handling costs 50%.



IN ANY 125-175 H.P. UNIT

Small off-highway trucks, fire trucks, airport tow tractors, graders—a whole long list of equipment becomes better equipment with an Allison CT-3340 TORQMATIC DRIVE.

This torque converter-hydraulic transmission team has 4 speeds forward, 2 reverse—converter-driven PTO—drive line parking brake—full power shifts at all speeds—optional lockup clutch—can be direct or remote engine mounted.

Want more information? Send for the fact-packed CT-3340 brochure today.

Allison TORQMATIC

TORQMATIC® DRIVES

The world's most complete line of hydraulic drives

Over 980 Models Used by 108 Manufacturers in 100 to 525 H.P. Equipment

Allison Division of General Motors
Dept. AF-1 Indianapolis, Indiana

Please send me application data on your CT-3340 TORQMATIC DRIVE.

Name_____

Title_____

Company_____

Address_____

City_____ State_____

DIRECTOR OF TRANSPORTATION
Director Brig Gen E C Hedlund rm4E290 53088
Deputy Director Col E A Guilbert rm4E319 78317

DEPUTY CHIEF OF STAFF, OPERATIONS

Deputy Chief of Staff Operations Lt Gen D C Strother rm4E1006 .. 55226
Asst Deputy Chief of Staff Operations Maj Gen H M Estes Jr rm4E1006 .. 55520
Executive Col M E Childs rm4E1006 55226
Asst for Weather Col J T Seaver Jr BC 947 55191
Director of Civil Engineering Maj Gen A M Minton rm5D400 79221

DIRECTOR OF TELECOMMUNICATIONS
Director Maj Gen H W Grant rm5B479 56324
Deputy Brig Gen J B Bestic rm5B479 56324
Executive Lt Col R J Hennessey rm5B479 75384

DIRECTOR OF MANPOWER AND ORGANIZATION
Director Maj Gen T J Gent Jr rm5D1014 75738
Deputy Director Col E F Rector rm5D1014 72183

DIRECTOR OF OPERATIONAL REQUIREMENTS
Director Maj Gen B K Holloway rm5C238 53020
Deputy Director Brig Gen W W Smith rm5C238 54627

DIRECTOR OF OPERATIONS
Director Maj Gen S W Agee rmBC912 76745
Deputy Director Maj Gen J K Hester rmBC912 56708

DEPUTY CHIEF OF STAFF, PERSONNEL

DCS/Personnel Lt Gen T H Landon rm4E192 71409
Executive Col C T Ireland Jr rm4E192 52228

CHIEF OF AIR FORCE CHAPLAINS
(T-8)
Chief CH Maj Gen T P Finnegan rm1078 69205
Deputy CH Brig Gen R P Taylor rm1080 69415

DIRECTOR OF CIVILIAN PERSONNEL
(Mun Bg)
Director of Civilian Personnel J A Watts rm4449 65126

DIRECTOR OF MILITARY PERSONNEL
Director Maj Gen A P Clark rm4E214 77558

DIRECTOR OF PERSONNEL PLANNING
Director Maj Gen E S Ligon Jr rm4E168 75221

DIRECTOR OF PERSONNEL PROCUREMENT & TRAINING
Director Maj Gen J V Edmundson rm4E184 71228

WOMEN IN THE AIR FORCE
Director Col E J Riley rm4E211 73872

DEPUTY CHIEF OF STAFF, PLANS & PROGRAMS

Deputy Chief of Staff Plans & Programs Lt Gen J K Gerhart rm4E1020 .. 79991
Asst DCS/Plans & Programs Maj Gen C H Childre rm4E1020 ... 79811
Executive Col L R Moore rm4E1020 79991

ASSISTANT FOR COORDINATION Brig Gen N F Parrish rm4D968 .. 76355
Assistant for Nat'l Security Council Affairs Col J L Weber rm4D984 .. 74024
Assistant for Western Hemisphere Affairs Maj Gen T C Darcy rm4E985 .. 57131

DIRECTOR OF PLANS
Director of Plans Maj Gen G W Martin rm4E1032 55833
Deputy Dir Maj Gen D A Burchinal rm4E1038 52888

DIRECTOR OF PROGRAMS
Director of Programs Maj Gen P M Spicer rm4E1021 52257
Deputy Dir Brig Gen R W Fellows rm4E1021 52311

MISCELLANEOUS, AIR FORCE

AF BALLISTIC MISSILE DIVISION LIAISON OFFICE
Maj E B Owens rm4C1033 .. 75454

MISCELLANEOUS

AERONAUTICS & ASTRONAUTICS COORDINATING BOARD

Co-Chairman Herbert F York rm3E1006 79111
DOD Secretary Alvin G Waggoner rm3E130 72467

AIR FORCE OFFICE OF SCIENTIFIC RESEARCH

(T-X)
Commander Col A P Gagge rm2702 61873

AIR FORCE RESEARCH DIVISION

(T-X)
Commander Maj Gen W M Canterbury rm2057 61096
Vice Commander Brig Gen B G Holzman rm2059 61167

ARMED FORCES CHAPLAINS BOARD

Chairman Rear Adm Geo A Rosso (CHC) NSN rmG-803 Arlx 42347
Executive Director Lt Col Wm L Clark rm3C960 79015

ARMED FORCES MANAGEMENT ASSOCIATION

(Mn Nv)
Exec Dir Vice Adm Harry E Sears (Ret) rm1205 62467

ARMED FORCES SUPPLY SUPPORT CENTER

(Mun Bg & T-X)
Director H C Hangen rm4111 Mun Bg 63475
Deputy Director Brig Gen I L Allen rm4111 Mun Bg 64195
Analysis Staff Col J R DeLuca rm4103 Mun Bg 64560
Cataloging Division Capt E T Dobbyn USN rm2026 ..... 1220 Ext 276
Data Processing Division C E Boddie rm1026 ..... 1220 Ext 218
Management Office W F Roberts rm4123 Mun Bg 67351
Standardization Division Col E T Wiley Jr rm4221 Mun Bg 65167
Utilization Division Capt D O Lacey rm4215 62211

ARMED SERVICES TECHNICAL INFORMATION AGENCY

(Arl Hall Sta)
Commander & Director Col W W Dunlop ..... 189 Ext 381
Deputy Director J S Stearns ..... 189 Ext 380

BOARDS AND COMMITTEES—NATIONAL DEFENSE:

"For information on Boards and Committees of the Dept of Defense, call ..... 75371"

DEFENSE ATOMIC SUPPORT AGENCY

(PNT)

CHIEF DEFENSE ATOMIC SUPPORT AGENCY
RAdm Edw N Parker rm1B668 56375
Deputy Chief USAF Brig Gen D Polhamus rm1B677 75181
Deputy Chief USA Brig Gen R H Harrison rm1B668 55338

GENERAL ACCOUNTING OFFICE, DEFENSE ACCOUNTING & AUDITING DIVISION

(PNT)
Dir W A Newman rm6915 GAO Bg ..... 129 Ext 5187
Dep Dir C M Bailey rm6916 GAO Bg ..... 129 Ext 5188

MILITARY LIAISON COMMITTEE TO AEC

(AEC Bg, Germantown Md)
Chairman Hon Herbert B Loper rm3E1074 Pnt 56639

MILITARY PETROLEUM SUPPLY AGENCY

(Y & D)
Executive Director Rear Adm O P Lattu rm1B3 78900
Deputy Executive Director Capt P D Chubb rm1B3 78909

MILITARY TRAFFIC MANAGEMENT AGENCY

(T-7 Grv Pt)
Executive Director Maj Gen I Sewell Morris rm1942A 53301
Deputy Exec Director Col E W Sawyer rm1940 53301

NATIONAL SECURITY AGENCY

Ft Meade, Md ..... Code 188-0
NSA Duty Officer ..... 188 Ext 7930

NORTH ATLANTIC TREATY ORGANIZATION

(PNT)

STANDING GROUP
(Entrances at 1E929 and 1D943)
Information 74450

SUPREME ALLIED COMMANDER ATLANTIC *(U S Liaison Officer)*
U S Liaison Officer Capt W H Weston USN rm5E609 75877

SUPREME HEADQUARTERS ALLIED POWERS EUROPE (SHAPE)
Liaison Officer Lt Col C J George rm1A713 77946

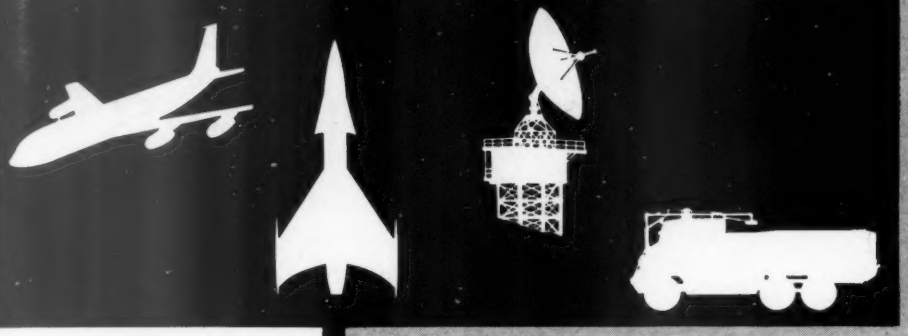
PERMANENT JOINT BOARD ON DEFENSE, CANADA-UNITED STATES

(PNT)
Chairman U S Section John A Hannah rm3E237 74946

SMALL BUSINESS ADMINISTRATION LIAISON

(PNT)
Liaison Officer T G Benton rm3E827 71946

WHICH PICTURE FITS YOU BEST?



Do you manufacture aircraft, missile, electronic or ground support equipment?

- Writing & Editing
- Parts Listing
- Illustration
- Reproducible Copy
- Spare Parts Documentation

No matter what your answer, you must be interested in reliability in service. But, in the long run, reliability in service requires reliability in service information.

This is where we come in. Our business is the preparation of the technically adequate and accurate service manuals demanded by the military . . . and desired by the manufacturer to maintain his reputation for equipment reliability.

Spruce Technical Publications can provide complete services for many types of military and commercial manuals, and for diverse military technical documentation. This is another service of American Aviation Publications.

Brochure available on request

SPRUCE TECHNICAL PUBLICATIONS
608 South Dearborn Street
Chicago 5, Ill.

A subsidiary of . . .

AMERICAN AVIATION PUBLICATIONS, INC.

Missiles vs. Modernization:

The Brewing Debate "Deterrence" or "Counterforce"

UNTIL the newly elected political administration is firmly ensconced in office, the lid is staying on a simmering debate within Pentagon walls over where current hardware programs are leading us. In essence: how valid is today's "minimum deterrence" military strategy?

The argument is almost certain to crop up when Congress convenes. Its outcome will be the key to who gets if not a big cut of the resources pie this year, at least a considerable lien on the pie in years to come.

Deterrence advocates say, essentially, that we are on the verge of a nuclear parity which makes general war, as an instrument of national policy, highly unlikely. "Why launch nuclear holocaust when you can't conquer but only destroy what you hope to gain—and probably wipe yourselves out in the bargain?"

Basically, "We have fulfilled the requirements for 'minimum deterrence.' " Thus, they say, the time has come to start siphoning off some of the money which goes into delivery systems for the big bomb, put it into beefing up rapidly weakening capabilities to fight less-than-total-war conflicts, i.e. for modernization.

The counterforce advocates say this is not so. If, by 1965, they say, our primary reliance for the general war job is on the long range missile, we will have dealt ourselves a losing hand. We must get off this minimum deterrence kick because the missile, by itself, does not amount to deterrence of general war, at all, or anything like it. (In fact, they say, the public is so disillusioned with the idea, i.e. that the cure is as bad as the disease, that they are looking for organizations other than defense to come up with the answers to security.)

To many who have delved into the pros and cons of this hassle, the regretable aspect is that the debate should not take the form it is likely to take at all. Even the counterforce advocates, if they should win, admit that it will take years to first, change course on development project emphasis; second, actually achieve hardware to successfully meet the likely military challenge of the late 1960s and later.

And the stop gap measure appears, at this stage, to be available only in an augmented program to modernize Army and Navy—as they've been asking for several years now.

But the stumbling block to all of them pulling together toward what is in reality a common goal is that the budget would have to be boosted —considerably more than the experts predict it will be. The result for conscientious men trying to do their part of the job: a real donnybrook.

In any event, the new twist in thinking is coming from the counterforce people—who have their own definition of "modernization." Success or failure by the competitors hunting resources will depend on how well the counterforce contentions are proved and/or shot down. This is what the contentions amount to:

"IN CUTTING the number of our armed forces we are not decreasing the fire power . . . This is the main point . . . I again emphasize that we already possess as many nuclear weapons, both atomic and hydrogen, and the necessary rockets for delivering these weapons . . . that should any mad man launch an attack . . . we would be able literally to wipe the country or countries . . . off of the face of the earth." These are not the words of Dwight D. Eisenhower introducing the "New Look" in the fall of 1953. They were uttered by Nikita Khrushchev on 14 January 1960.

Although Khrushchev's acceptance of "minimum deterrence" is a tribute to American salesmanship, it unfortunately gives the Communists the keys to Eurasia. Soon Asia will be theirs for the taking. Thereafter, as soon as the utter despair implicit in the mutual suicide of massive retaliation becomes apparent to the citizens of Western nations, we will also be subject to the piecemeal loss of Europe.

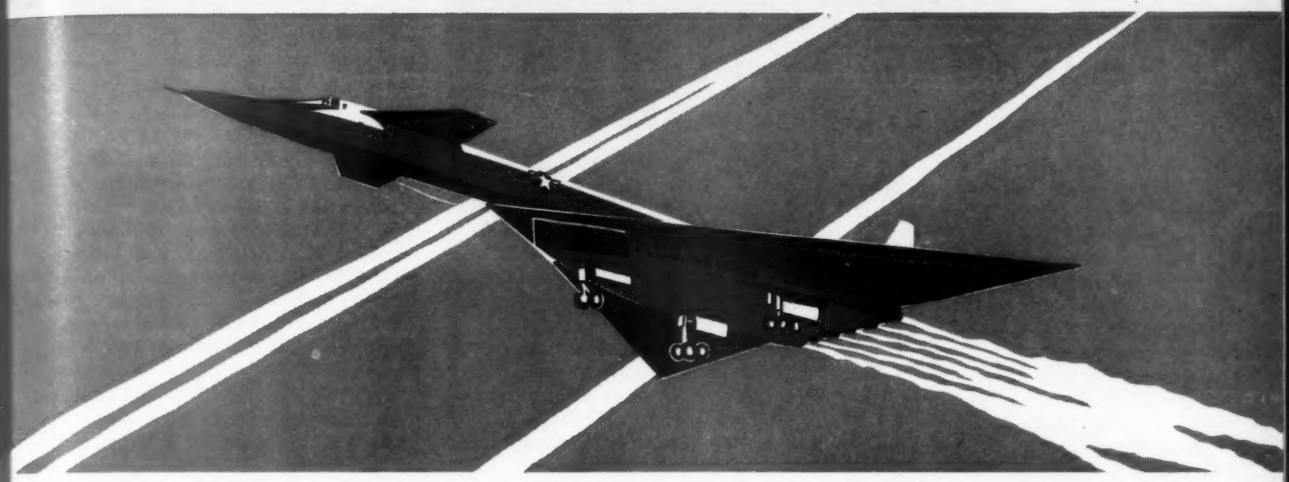
During the past five or six years, massive retaliation has been corrupted to mean the wanton destruction of Soviet cities and people. Its goal—the utter devastation of Russia. Its motive —an irrational urge for revenge. Its price—national suicide!

Our present dilemma arises from two commonly accepted positions: 1) our extreme reluctance to base survival of the free world on a classical conventional war of attrition resulted in a national policy of massive retaliation; and 2) the ever-increasing cost of modern sophisticated weapon systems makes the cheapest form of national defense extremely attractive.

Six years ago, General Nathan Twining was convinced that: "War may not be prevented by an uneasy and debatable balance, but war may be prevented by a superiority of weapons on the side that wants peace. The fact that the United States for years held a virtual monopoly of superweapons and long-range air power without exploiting that power in war, proves to all the world the sincerity of our defense for peace.

". . . counterattack has been referred to as retaliation. The word is appropriate only in the sense that it defines the counterattack as an action to be taken in response to enemy action.

"The word 'retaliation' is misleading



THE B-70—*In competition with ICBM's as a U.S. deterrence unit.*

if it is assumed to mean 'revenge.' A desire for revenge may be understandable but from a military standpoint, as well as from a humanitarian standpoint, it should not be allowed to influence our strategic decisions in war.

"In air warfare machines and weapons are overwhelmingly important, for without them there can be no air warfare at all.

"Machines and weapons, not people, are the principal targets to be destroyed . . .

"It would be a moral blunder and military blunder to concentrate our hopes for victory on the piling up of casualties when the opportunity exists the great artistic, scientific and cultural achievements, and probably condemning mankind to begin all over again the age-old struggle upward from savagery to decency, justice and right."

AS RECENTLY as January 7, 1960, the President, in his State of the Union message, said:

"First, I point out that for us, annual self-examination is made a definite necessity by the fact that we now live in a divided world of uneasy equilibrium, with our side committed to its own protection and against aggression by the other.

"With both sides of this divided world in possession of unbelievably destructive weapons, mankind approaches a state where mutual annihilation becomes a possibility. No other fact of today's world equals this in importance—it colors everything we say, plan, and do."

From this statement, we can postulate the following:

Should the Russians choose to take Berlin, the U.S. would be faced with the impossible decision of responding with nuclear military force under our national policy of massive retaliation —and thus assure our own "suicide." The alternative: conceding the fall of Berlin and the eventual piecemeal "liberation" of democratic Eurasian nations.

Also, in a small hot war in Laos we could assist with U.S. military forces using conventional weapons. However, our forces could not be decisive if China gave substantial help to the insurgents. Thousands, or even hundreds of thousands of "volunteers" could cross the border from China and North Viet Nam.

We would then be forced to counter this force with large Free World forces. A classical war of attrition would result. The Free World would be fighting a battle with tremendously long lines of communication while the Communists would have very short lines of supply. A Korean-type conflict could result but without our having control of the airspace over the battlefield.

To prevent defeat in situations such as these mentioned, some advocate the use of tactical nuclear weapons. However, our tactical nuclear weapons could be decisive *only* if the Communists did not also use them—and such an assumption is untenable.

Under conditions of mutual massive retaliation, introduction of tactical nuclear weapons by both sides into a small war *which both sides have determined to win,* can only result in denial of the disputed area to both parties by ultimately devastating the land. This course would be unacceptable to the third party which the U.S. was attempting to aid. Only once, if ever, would our assistance be sought under these conditions.

The idea that we would commit "mutual suicide" for a third party is not credible—our successful conclusion of a war half a world away against determined Communist attack is not militarily feasible under "minimum deterrence." The threat of mutual annihilation cannot spring us from this trap.

Thus we have the unhappy situation wherein the "mutual suicide" aspects of mutual massive retaliation serve to protect only the U.S. and Russia proper.

The fallacy of "massive retaliation," "minimum deterrence," "finite deterrence," "overkill," "nuclear parity," "nuclear stalemate," "nuclear impasse," "stable/unstable deterrent," etc., is that *military force is applied primarily against non-military targets.*

THE IDEA that the Free World can hold hostage millions of Communist people through nuclear rockets and bombers and thus deter Communist military aggression is extremely attractive—and entirely in error. A concept of holding cities and people as hostages is about as cheap a method of "deterring" as can be conceived. The cheapest deterrence of all today, however, would be the unquestioned capability to destroy all Communist people. If we are interested in economy, germ warfare is the cheapest way to achieve this end. This would also be the cheapest method for the Communists to use.

The peace of the past decade has been brought about by superior, initially overwhelming, U.S. strategic offensive capability. To concede, as our national policy of massive retaliation does, that "numbers do not count" is to accept the aberrational military philosophy of employing an inferior military force against non-military targets (population and urban areas) in a wanton campaign of genocide. Massive retaliation demands that Russia believe we are capable of a premeditated and irrational act of national suicide.

Our country, and now Russia, has almost completely lost sight of the

Is the ICBM the Answer?

immediate objective of *all* military force—to prevail over the opposing military force. Again as General Twining so aptly said "No matter how desperately we may be forced to fight in our own defense and in defense of our allies, we shall hold to this principle: America plans no wanton destruction of people under enemy control, and we have no desire to revenge upon unfortunate populations who live in fear of their Communist masters."

A major redirection of our military thinking is in order. We must endeavor once more to achieve a superiority in strategic offensive capability. This capability must be directed toward destroying opposing military forces—not destroying people.

The first step toward a credible national defense which can protect our country *and* the Free World is to expurgate massive retaliation of its current objective of carnage, genocide, devastation and annihilation.

The only Russian strength which menaces our country is their strategic offensive force and its protecting air defense force. Therefore, our entire attention must be limited to this objective. Success in attacks against strategic offensive and air defense forces renders all other military forces impotent.

The problem for military planners then becomes one of seeking out and destroying the opposing weapon systems and their ground support. Extreme accuracy is required. Unnecessary destruction is to be avoided since whatever actions are employed against the enemy's civilian population can usually be employed against our own.

Implicit in a strategic offensive force designed to be used discriminatingly against opposing military forces is the capability to destroy hostage populations. This is our safeguard against indiscriminate attacks.

EVEN DURING the death throes of its military forces a nation cannot employ its waning strength in an act of revenge and thus expect to change the outcome. The issue would have been clearly decided prior to that time. It is difficult to visualize a nation electing to kill its citizenry *when such an act will not bring victory or even stalemate.*

The problem which gives rise to the negative solution of suicide is obviated by creating, prior to war, military forces capable of defeating other military forces. Difficulty in creating weapon systems to accomplish this is not grounds for abandoning the concept.

So much fervor has been generated over how many ICBM's we should have on a certain "critical" date that the fundamental issue of whether the ICBM will be the decisive strategic weapon at all has been ignored.

Placing missiles in submarines, on railroads, on highways, on surface ships or in the air provides them with protection by taking advantage of the gravest weakness of long-range missiles—the almost insurmountable problem of destroying a moving target with them. One must first detect a fleeting, mobile, or moving target, decide that it is worthy of destruction, select the missile to be fired against the target, compute the ballistics, program this data into the missile, and prepare it for firing. Only then can the missile be fired.

Even if all these operations could be performed *instantaneously*, the ICBM still has a flight time of about 30 minutes. Therefore, if the target selected can significantly change its location in something less than 30 minutes, the probability of its destruction is drastically lowered.

Since flight time of an ICBM cannot be appreciably reduced, the weapon is relatively ineffective against mobile targets but extremely effective against fixed targets.

Recently, at San Jose, Calif., Admiral Burke had this to say about missile mobility: "Fixed launching platforms in known locations will become more and more vulnerable in the missile era, but it will not happen overnight.

"At the same time mobile launching platforms remain virtually invulnerable. (Admiral Burke obviously meant 'virtually invulnerable to *ICBM's* since mobile targets on sea or land are obviously vulnerable to other weapons such as submarines and aircraft, and to target-seeking missiles fired at short ranges.) The more an aggressor shifts his nuclear weapon capabilities to ballistic missiles the less vulnerable mobile launching platforms become and the more they will be needed."

Can the ICBM provide the primary means of dominating Russia if deterrence fails? No. Visualize the situation a couple of years from now when we have the Polaris and the mobile Minuteman in operational quantities and the Russians have similar missiles. Clearly, ICBM's, fixed or mobile, cannot seek out and destroy opposing *mobile* ICBM's. If a majority of the ICBM's on both sides are mobile then the outcome at this point in the military conflict is inconclusive.

If it is argued that an airborne alert of Strategic Air Command bombers would be added insurance in an admittedly precarious strategic situation, *then we must consider whether such a force can really contribute to our defense.*

It is only too obvious that if there was a legitimate requirement for all the aircraft (about 2000) in SAC prior to the ICBM, an airborne alert which would provide us with only about 5% of this force would leave us with a rather severe deficit in the number of weapons required.

Have we had, all along, many more aircraft in SAC than we needed? Have the targets we want to destroy been so reduced in number that we can accomplish the necessary task with a drastically reduced force? The answer to the former is that *SAC was built to destroy Russian military strength, and the force required to do this was thoroughly computed and agreed to by the Chiefs of Staff of all the Services.*

Then, under conditions of drastic numerical inferiority, will an airborne alert force contribute to our security? Obviously not. If such a force is incapable in retaliation of destroying the remaining Russian long-range military force, our defeat would have been accomplished by the first Russian salvo against our strategic strength. The Russians could then bring us to our knees by threatening or beginning the systematic destruction of U.S. cities with their superior strategic forces.

Protecting about 5% (125 B-52's) of SAC by putting them on an airborne alert is militarily insignificant in comparison to the threat against us.

Because aircraft are the sole existing means to attack and destroy mobile forces, and because the ICBM has the undeniable capability to destroy airfields, we must take one, or preferably both, of two courses of action to protect our aircraft: (1) aircraft must be capable of infinite dispersion on the ground—they must be capable of Vertical Takeoff and Landing. (2) Aircraft must remain in the air a major part of their useful life (Aircraft Nuclear Propulsion). In the present state of the art VTOL is limited to interceptor type aircraft due to low ratio (thrust to weight) engines while nuclear propulsion is limited to large bomber type aircraft due to engine weight, shielding, etc.

An excellent example of advance

planning, and recognition of the inevitable, is demonstrated by the West German Luftwaffe which anticipates the loss of all of its airfields at the outset of a war. To maintain mobility of its aircraft and to retain its striking force against the enemy, the Luftwaffe, in cooperation with Messerschmidt, Heinkel and Rolls Royce, is presently developing a 50,000 lb. Mach 2-plus VTOL fighter. This aircraft will be far less vulnerable to long range ballistic missiles because it will not be tied to an airfield. It will takeoff or land almost anywhere, thereby increasing its chances of re-use and initial survival.

FOR LARGE BOMBERS, the most promising solution to the problem of ICBM vulnerability is Aircraft Nuclear Propulsion (ANP), which has been under development for many years. Last year, Lt. Gen. Roscoe Wilson, Air Force D/CS for Research and Development, said that with $200-million a year for two years, we could fly a nuclear powered aircraft. General Wilson's request was cut to $75-million annually.

One has only to look at the impact nuclear propulsion has had on naval warfare to recognize the potential significance of ANP to aerospace warfare.

It is unfortunate that technical difficulty, lack of funds—forcing a program stretch-out—and an arbitrary increase in required performance have delayed the program. A specific forecast for the first nuclear-powered flight is no longer possible.

In the confusion of trying to evaluate current and future weapon systems, we must remain clear about one overriding fact:

When there is little difference in technology between two forces, the military force which is significantly inferior in numbers is doomed to defeat.

There is no bargain basement security—and this is especially true under a passively peaceful policy which gives an opponent the first strike.

Based upon what has been covered this far, we can analyze some of the present military programs to see if they contribute to a military policy of national survival and protection of the Free World or to one which leads to national suicide.

BMEWS—By far the most important defense requirement today is a Ballistic Missile Early Warning System so we can have available 600 SAC aircraft to fight a war rather than an ineffective 125 airborne B-52's, assuming airborne alert. Work on BMEWS and Midas should proceed with highest

TITAN—*Another advancement in missile technological progress.*

HOW SEMO SIMPLIFIES DI

SYLVANIA ELECTRONIC SYSTEMS THROUGH SEMO COORDINATES THE

SYLVANIA ELECTRIC PRODUCTS INCORPORATED
AUTOMATIC ELECTRIC COMPANY
LENKURT ELECTRIC COMPANY, INCORPORATED
LEICH ELECTRIC COMPANY

ES DELIVERY OF DEFENSE SYSTEMS

Now under the single direction of your representative in SEMO—Systems Engineering and Management Operation for Sylvania Electronic Systems—are all the resources of General Telephone & Electronics. Included are the vast technical skills and facilities of every subsidiary of this world leader in communications and electronics.

SEMO simplifies the job of obtaining complete defense systems by providing a single, responsible and accountable source for conception, evaluation, engineering and management of major systems. Systems-oriented in concept and personnel, it is staffed by members of the General Telephone & Electronics corporate family. And its sum of talent and experience assures completely integrated systems of specified performance, delivered on time at competitive costs. Benefits are quick-reaction capability, efficiency and financial accountability.

For full information on how SEMO can be of special service to you, write Sylvania Electronic Systems, a Division of Sylvania Electric Products Inc., Waltham, Massachusetts.

SYLVANIA **ELECTRONIC SYSTEMS**
Government Systems Management
for ***GENERAL TELEPHONE & ELECTRONICS***

GENERAL SYSTEM

THE DEFENSE SKILLS AND FACILITIES OF

ELECTRONIC SECRETARY® INDUSTRIES, INCORPORATED
GENERAL TELEPHONE & ELECTRONICS LABORATORIES
GENERAL TELEPHONE OPERATING COMPANIES
GENERAL TELEPHONE & ELECTRONICS INTERNATIONAL

The Growing Programs . . .

national priority. No other single area of defense is so important.

ICBM's—Although *complete* reliance on ICBM's is militarily unsound, there is a valid requirement for our present missile program. Our first ICBM's, which are admittedly "soft" (vulnerable), give us no more than a very small initial capability for the quick destruction of fixed military targets *if these weapons evade destruction in the first enemy strike.*

The effectiveness of an ICBM is dependent upon the missile's reliability, its CEP (Circular Error Probable) and yield of its warhead. Considering *today's* reliability, CEP and yield, the present program for dispersal and hardening decreases vulnerability of our missile force during the time period when we will have significantly fewer missiles than Russia.

But long range rockets will increase in reliability, accuracy, and yield. As missile technology progresses, hope for their survival must be transferred from hardening to mobility. Our present rocket program (except for Polaris) fails to emphasize the importance of achieving a mobile long range capability at the earliest possible date. Our mobile Minuteman must be rushed into operation as our Polaris is being rushed.

Manned Aircraft—We have used the manned bomber as our primary strategic system for many years—even now it represents the crutch which *may* see us through the critical period when the Russians enjoy a significant, but not overwhelming, ICBM advantage.

While today's manned aircraft represent the sole means of dealing with mobile strategic offensive forces, the ICBM has effectively eliminated the airfield on which the aircraft is dependent. Thus, until we have ANP for our heavy, long range aircraft and a VTOL capability for our lighter defense aircraft we will not have the means of destroying mobile strategic forces. What will the United States do if the Soviets develop operational ANP and VTOL aircraft before we do?

VTOL/STOL—Recently Air Force was reported to have dropped its Mach 2 VTOL fighter in favor of an STOL (Short Takeoff and Landing) plane. The reason was said to be cost and availability date.

But it is doubtful that this was a wise decision. The STOL will still have the most serious limitation of our present aircraft—it will require an airbase.

B-70—The proposed B-70 possesses the most serious limitations of our current manned aircraft. It does have some increased capability such as flying much faster and many thousand feet higher than other bombers. But again with no airfields, it is a one-shot weapon.

If the B-70 is employed on either a ground or airborne alert it must proceed directly to its target at the outset of war. It does not have the almost unlimited range of ANP and it is difficult and very expensive to harden it so that it could ride out attack by ICBM's. Therefore, whether carrying several small weapons or one big weapon, *it competes with ICBM's for the job of destroying fixed targets.* And the ICBM can do the same job *far* cheaper.

HOWEVER, the B-70 does have a remarkable and critically needed growth potential. Application of ANP to this aircraft would give us the most versatile weapon system this nation ever possessed. The bombing-navigation system (BNS) and the ECM equipment will unquestionably be required in any future nuclear powered plane.

F-108—The recent cancellation of the F-108 program was a mistake. With ANP and VTOL nearer fruition each year (even at our own "business as usual" pace), we must also build a defense force capable of destroying such weapons. Perhaps the most important part of the F-108 program was its airborne radar detection and fire control system. We must give the Soviets capability credit for "standoff" missiles, such as the cruise-type Hound Dog and the ballistic ALBM. It is imperative that stand-off missile *carriers* be brought under attack as far from their targets as possible.

The Navy showed excellent judgment in picking up the most valuable and most easily overlooked part of the F-108 program—the electronic gear. It will be an invaluable asset a few years hence. This equipment is essential to any future defense against nuclear powered aircraft.

Polaris—The Polaris already possesses mobility, and can make an important contribution to our strategic offensive force by attacking airfields, fixed air defense sites, submarine pens, nuclear weapon storage sites, etc. *They should not be intended for the suicidal destruction of Russian cities.* But by attacking the enemy's air defense structure, for example, they can aid in degrading the Soviet defenses so that carrier aircraft can penetrate hostile airspace. Since they can only be used against fixed targets, the limitations cited for ICBM's apply to Polaris as well—future war will not be won solely by destruction of fixed targets.

Attack Carriers—Carrier aircraft, provided the carrier can be protected for a reasonable period of time, possess the capability to attack mobile, fleeting targets and targets of unknown or uncertain location. However, one limiting factor must be pointed out here. Because of the rather short range of carrier based bombers, the aircraft carrier must be perilously close to enemy shores in order for the bomber mission to be effective. To protect itself from attack even in peace, it must be so far from enemy shores that the bomber mission is at best, far from optimum to deal with mobile, unknown or uncertain targets. Perhaps the most important contribution of carrier aircraft in general war would be armed reconnaissance.

Post Attack Reconnaissance—Today our deep past attack reconnaissance capability is limited almost entirely to SAC aircraft. At the start of general war, in the ICBM era, SAC will launch its aircraft and will receive post attack reconnaissance from them for approximately 12 to 18 hours. At the end of this time all intelligence as to what targets have been destroyed and, most important, what targets remain to be destroyed will cease.

Even if the ICBM era were devoid of manned aircraft, post attack reconnaissance would be absolutely essential. One would have to know to what degree he was successful in his attack so that surviving *fixed targets* could be eliminated. Attempting to destroy mobile missiles would be exceedingly difficult *with* post attack reconnaissance—*without it* the problem appears hopeless.

For several years reconnaissance satellites cannot be expected to produce all the post attack reconnaissance so vital in war. The recent successful TIROS (weather satellite) shot is a marvelous achievement. The geographical features of the Gulf of St. Lawrence, the Mediterranean, and Saudi Arabia were pointed out in several photos. But being able to recognize the Mediterranean is still a long, long way from being able to spot an object on the ground the size of a missile or plane.

In any event, to destroy mobile targets requires that the instrument of perception be capable of almost instantaneous attack, or the mobile target will have changed position. After

detection of mobile forces by satellite, their destruction by ICBM's remains all but impossible because of the time of flight of the ICBM to its target.

Hardened, Fixed ICBM's—For reasons of economy the military has located and plans to continue locating, fixed ICBM sites relatively close to major military installations and population centers. In light of considerations mentioned above, this practice is sheer folly and should be abandoned.

Satellites—The DOD is developing military satellites such as Midas, Samos, and the communications satellites. It is also trying to develop an anti-missile missile. But, the military space program, when examined in the light of this series of articles, contains two obvious deficiencies. These are, at the very least, deficiencies in assigning the proper priority to the programs. When satellites begin to do a military job we must concurrently have the means of neutralizing or destroying them.

Satellite Detection—We must have (1) a reliable and effective passive detection system and (2) an anti-satellite missile. The present arrangement wherein Army, Navy and Air Force through ARPA devote such funds as may be available to the development of a detection "fence," together with its sophisticated computers, is inadequate.

The recent experience of our military being unable to positively identify an orbital object which was passing over the United States points up the requirement for such a satellite surveillance system. A surveillance system is, of course, absolutely vital to the functioning of an anti-satellite system.

Satellite Destruction—Some believe that the problem of satellite destruction could be solved somewhat easier than that of ICBM warhead destruction. This is based, among other things, on the fact that uncontrolled satellites travel in a highly predictable orbit, therefore an accurate forecast position can be computed. The necessity to neutralize or destroy hostile satellites of all types is obvious. The anti-satellite program should be pushed hard.

Civil Defense—Civil defense is not a responsibility of the military. It is, however, a subject which must not be overlooked in any discussion of national strategy.

We can judge the military value of civil defense by noting that the USSR, which attaches relatively little value to the lives of its people, has far exceeded the United States in the development of a program to protect Soviet citizens from fallout. We have failed as a nation to provide Civil Defense for our people because we view the possibility of World War III as a purely academic exercise with absolutely no chance of it becoming reality. No other unemotional reason can explain the total indifference to our basic survival. If this reasoning is in error . . .?

If present policies in the Defense Department continue, our future security will depend *primarily* on long range ballistic missiles that cannot attack mobile targets. The enemy will inevitably make his long range missile force mobile—as we have done with the Polaris and are planning to do with Minuteman. When we are faced with mobile Russian rockets, vertical take-off aircraft and aircraft of unlimited range, what must our answer be?

We may have some rockets that can destroy cities and people—but against the threat of superior Russian forces they will prove inadequate for a military contest, and even more inadequate for any contest of mutual retaliation.

ICBM's cannot, by themselves, protect those nations which we have sworn to protect. They cannot, *by* themselves, protect the U.S. They cannot by themselves, achieve a military victory or even stalemate. Alone and unsupported by weapons other than conventional aircraft of limited range they could only invite their own initial destruction or provoke the ultimate destruction of our own people.

On the other hand, dispersed and mobile forces, on the surface or at various altitudes, could guarantee an ultimate military victory. Only such a guarantee can keep an aggressive enemy at bay. We must now develop anew our demonstrable ability to attack and destroy a military threat if we are to continue to resist such threats. This can be done.

No one of these systems which are recommended will provide a complete answer. Progress and technology will show that some should be abandoned while others should be pursued. The important fact which applies to all proposals in the development of future systems and strategies is that progress must be made toward solving the problem of countering and destroying the enemy's military threat. We can marshal our resources to this end—but only after we shift the course of our planning from the present dead end street of deterrence through suicidal terror to deterrence by demonstrable military superiority.

Nearly 15 years ago, Army Air Corps General Hap Arnold warned, "present equipment is but a step in progress and any Air Force which does not keep its doctrine ahead of its equipment and its vision far into the future can only delude the nation into a false sense of security." ■

NORTHERN ORDNANCE INCORPORATED

Subsidiary of
NORTHERN PUMP COMPANY
Minneapolis 21, Minnesota

Guided Missile
Launching Systems

Prime Supplier to
BUREAU OF NAVAL WEAPONS, DEPARTMENT OF THE NAVY

JCS or Single Service . . . .

The Challenge is to Leaders

BRINGING up the subject of defense reorganization in many Pentagon circles has about the same effect as rasping exposed nerve ends with a number two file.

Sheer size, complexity, the amalgamation of three different types of organizations into one (with each one of *those*, by itself, larger than any private organization in the country) makes the Defense Department a reorganization expert's idea of paradise. Largely because of this environment and because of Defense's paramount national responsibility, any tampering with (particularly) the top-level Pentagon machinery must measure up to:

1—Will a new or rearranged setup improve, or at least not further hinder, the Pentagon's ability to manage the fighting of wars? Even peace time dollar economy and routine office efficiency are secondary to this consideration.

2—Does a proposed change in organization and responsibility really streamline the operation or does it merely transfer the workload and problems from one group (thereby making them look more efficient) to some one else (thereby cutting their effectiveness)?

And back of all this is a basic factor which should be obvious but too often is ignored: even in that monolithic management morass known as the Department of Defense, it is the leaders, the people, who do the work and get the jobs done. Is their tardiness to perform or outright failure or "excessive" consumption of resources due to roadblocks thrown in their path by the organization, Or is duplicated indecision, wherever alleged, the fault primarily of the executives themselves, their lack of managerial knowledge, experience, or downright savvy?

And even beyond *that*, whether the organization is good, bad or just slightly incongruous, the challenge is to its leaders. Either run a smooth responsive operation within the present structure or, if they can't, see that the setup is changed so they can.

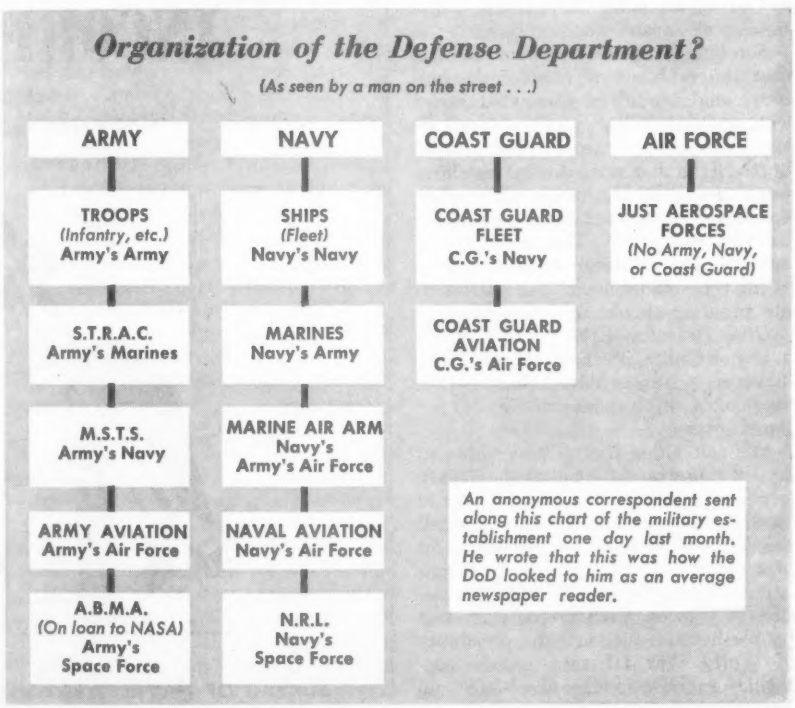
Snorts one long-time analyst of the defense structure, "The tendency to blame some amorphous ghost called 'the organization' only encourages drastic changes—even though changes won't necessarily solve the problem. We wouldn't need many of these changes if the people would do their jobs."

Against this background, the debate over how defense organization should be set up goes on—as it has been going on for several score years. All the arguments for and against all manner of changes have been voiced before, in one form or another. Have changing times and changing military technology made new, more drastic changes necessary? Or is the current arrangement good enough if we just shake out the bugs and insist that leaders accept their responsibilities to total national defense?

As in any argument, the advocates of change usually grab the stage first. The recommendations for change run the gamut from evolutionary "adjustments" to "concentrate more authority" in some form of tri-service committee to the drastic upheaval which would result in what is most frequently labeled "a single military service."

Unfortunately for unprejudiced analysis, "single service" has become a warped connotation. Those against such a major change actually encourage use of the term. The reason: used by itself it tends to rattle the emotions of fence sitters into reactionary objection to any change at all.

What these protagonists of change


Organization of the Defense Department?
(As seen by a man on the street . . .)
ARMY
TROOPS (Infantry, etc.) Army's Army
S.T.R.A.C. Army's Marines
M.S.T.S. Army's Navy
ARMY AVIATION Army's Air Force
A.B.M.A. (On loan to NASA) Army's Space Force
NAVY
SHIPS (Fleet) Navy's Navy
MARINES Navy's Army
MARINE AIR ARM Navy's Army's Air Force
NAVAL AVIATION Navy's Air Force
N.R.L. Navy's Space Force
COAST GUARD
COAST GUARD FLEET C.G.'s Navy
COAST GUARD AVIATION C.G.'s Air Force
AIR FORCE
JUST AEROSPACE FORCES (No Army, Navy, or Coast Guard)
An anonymous correspondent sent along this chart of the military establishment one day last month. He wrote that this was how the DoD looked to him as an average newspaper reader.

Ever since Congress said, with the 1947 National Security Act, "We want greater service unification," the Defense Department has been subjected to at least three major reorganizations (1949, 1953, and 1958), a raft of legislative amendments, and a multitude of internal organizational and administrative changes. The administrative rearrangements on top of this are countless. Rumblings over the horizon indicate a new drive for major change is mounting . . . .

really mean by "single service" is, in final analysis, that we need "a single military staff" at the top Pentagon level and a *different* functional organization of the national defense effort. In other words, a breakout by tasks rather than by military service. Most people who have studied this debate conclude that this is where the clearest (and most logical) battle lines can be drawn. In short, there are on one hand the advocates of today's setup with "occasional refinements." Opposing them: the backers of drastic change to a single staff controlling unified functional commands in the field made up, where appropriate, of land, sea and air units—backed in most cases by specialized types of support units.

For the Single Staff

To carry out its national responsibilities requires the defense establishment to perform well some six tasks. In broad brush terms, they are:

1—Integrate national military planning with U.S. security policy, back that with a responsive, ready force which can handle effectively any modern military challenge;

2—Maintain civilian control over military power without comprising military authority over military planning and operations;

3—Keep military planning on a national and not a particular service-oriented (or compromised) basis, at the same time, have a flexibility in assigning not only jobs but resources;

4—See that the *total* military establishment adjusts its strategy, doctrine, concepts, etc., to keep abreast of modern technology;

5—Similar to (4) be capable of adjusting to outside "environmental" pressures which can influence any or all of the above, i.e. the budget process, politics, other government groups; international affairs, etc.

6—Carry out all the above, both administratively and operationally, with economy and efficiency.

To those insisting on change, the present organization does not provide for easy handling of any of these responsibilities. Their complaint:

Today we have a hodge-podge of nonsense. The organization has digressed to impossibility, particularly since 1958. (At least, prior to that, Navy exercised command over all operating forces of the Fleet, Air Force commanded the Strategic, Tactical and Air Defense Command.) Today's setup, wherein command is vested primarily in unified commanders and the Secretary of Defense while support must come from individual services, is an organization bound to topple.

Among the arguments:

Since 1942, when the first Joint Staff was organized (not necessarily to meet U.S. needs, but so we could deal adequately with a similar organization among our allies overseas), we have retained this co-equal service representation in our highest military meetings.

Clear distinctions between land, sea, and air roles becomes increasingly difficult in the light of modern technology. To adjust to these advances, you have two choices: freeze the weapon, pass the "function" around—or freeze the function (as we first did in the Thor-Jupiter situation) and pass the weapon around. Whichever we do, say "change" advocates, how much credibility does this leave for the so-called separate uniform asset of four Services?

In Addition

In addition, the breakout of expenditures, i.e. where we put our resources, does not coincide with national military missions. More and more systems use air as a delivery medium. Yet, the Army, Navy, and Air Force have co-equal voices in strategic planning. And the commandant of the Marine Corps can put his oar in on any matters *he* thinks are of Marine Corps concern. Some inquire as to why one small functional organization, the Marine Corps, should be represented on the JCS when other functional organizations such as the Army's Strategic Army Corps, and the Unified Commands (EUCOM, SAC, etc.) are not so represented.

Representation

Thus, they say, we have equal representation without taxation. The statistics to back them up: since 1952, Defense expenditures have held steady at about 50% of the federal budget. Also, of Defense spending, joint projects account for 3% of total defense expenditures. During the same period, Navy's share of the budget has edged up approximately 28% of total defense expenditures. The Air Force allocation has exploded to almost 47% of the total and at the same time, Army's share of the pie has fallen to approximately 22%. This breakout proves that it is folly to consider that a balanced *national* military program is obtained by giving each military service an identical share of the total defense budget.

As everyone knows, money is a monumental headache. And it is a problem which probably always will be with us. For the last 15 years, even though the nation's gross national product is way up, military expenditures has hovered right around 50% of the total federal budget—while costs climbed.

Thus, with one million less people in the armed forces today than there were at the end of Korea, it is costing defense about the same to keep them there. Research and development payments have gone up from several hundred million dollars in 1953 to over $4-billion today—a jump from a fraction of one percent to around 10% of the budget. Of the rest, more and more funds are going into measures to assure survivability of weapons. Less and less is going into offensive systems *putting these weapons on enemy targets.*

Costs are rising. Yet capability is

The Controversial Pros and Cons . . .

not increasing on the same basis. Modern aircraft carriers cost five times their Korean era predecessors. Nuclear submarines cost 15 to 20 times World War II models (not to include Polaris missiles). Both Air Force and Naval aircraft costs have increased dramatically. The new Navy "Missileer" is forecast to cost $4-5 million an airplane while Air Force fighters have increased in cost some 15 to 16 times (the F-105 costs $2 million a plane compared to the F80's $80,000). The pattern is also true of Army antiaircraft weapons (the Nike family). The point: all the services are caught in the cost squeeze and, by themselves, none of them is ever going to be able to get out of it within the present organizational framework.

The Bottleneck

The Services used to fret with each other because of a fear of encroaching on each other's peculiarly suitable roles and missions. We have gone so far down the hardware road, that a commander today, in just about any one of the services, has the weapons to perform a great many different jobs. Yet, on paper, some part of that capability is presumably the prerogative of somebody else. This holds, particularly in the most expensive field of strategic hardware.

Example: To hit Russia west of the Urals, we have, or soon will have, at least this hardware and possibly some others: B-47s, B-52s, B-58s, B-70s, Atlas, Titan, submarine-base Polaris, Minuteman, carrier and Europe-based "tactical" aircraft (F-100, F-105, 83D, 83J, etc.), British V-bombers, Thor, Jupiter, Pershing, missile launching surface ships, Honest John, Corporal, Sergeant, Redstone, Mace, Matador.

What is more, things could get worse before they get better. Air Force wants a tactical ballistic missile, Army wants to extend Pershing's range and the Navy wants to extend the range of Polaris and also develop a "ground" model.

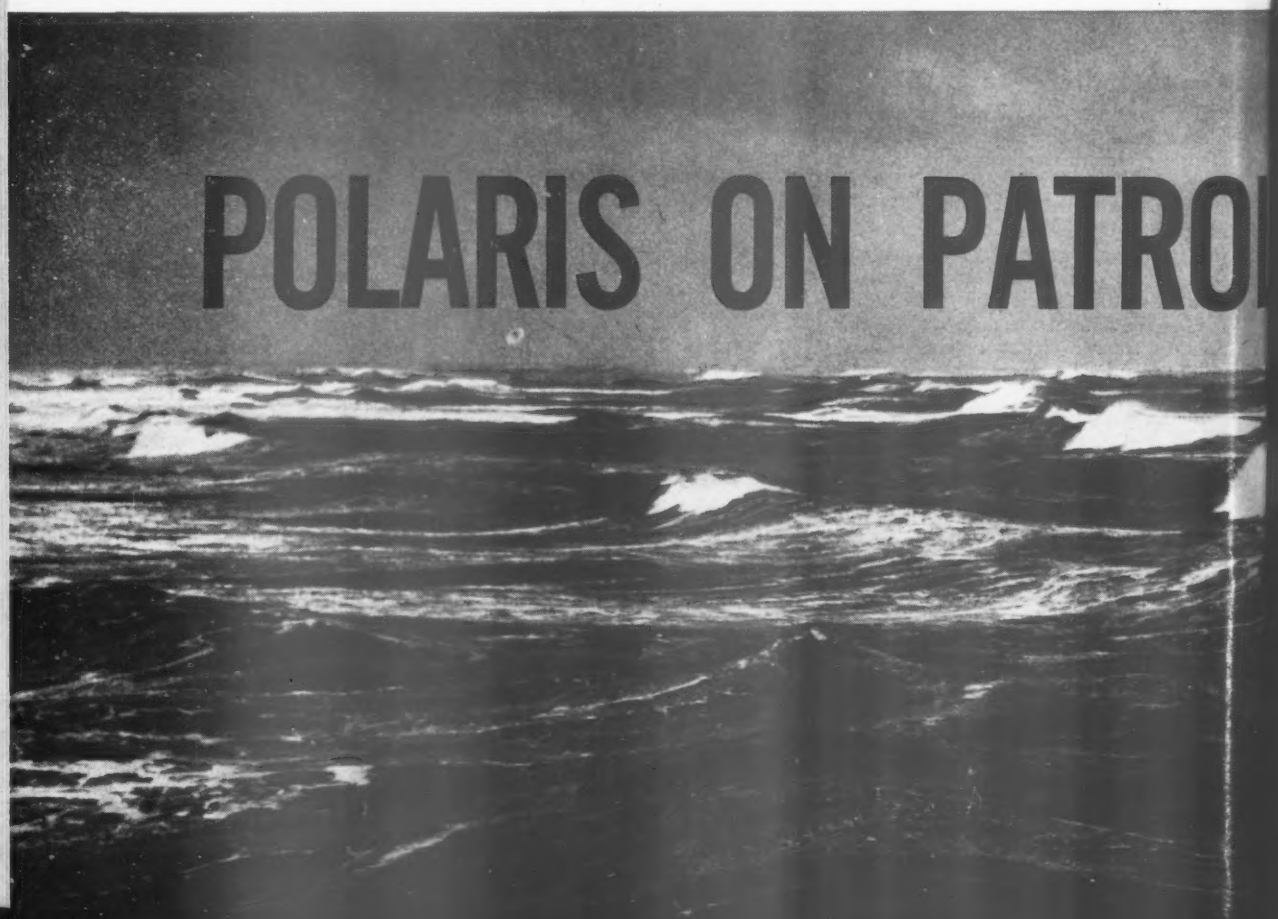
For that matter, one military engineer said, "I could take just about any one of the big bullets and, by making minor changes in booster and warhead, could give it a range of anywhere from 10 to 2,000 miles." What happens when we get satellites with both a defensive and offensive capability?

In sum, the Services are stepping on each other's toes, duplicating effort, and, at today's costs, no nation can afford it. Yet, under current, out-dated concepts, each of our three departments of Defense have an obligation to do as much as they are able. A good share of the reason the current budget gives us so much difficulty lies right here.

Competition

The present defense organization leads (as even the opposition admits) to competition for jobs and weapons, a competition which results in purchase of overlapping systems. And the hooker: it is hard to make a major decision today without hurting one of the services and virtually impossible to exchange significant amounts of resources when you do. The result, under the equal representation system, has, too often, been an encouragement not to make the decisions at all.

This happened in the Thor-Jupiter controversy, the Bomarc-Nike hassle, again in the Atlas-Titan debate. (When the demand for a military decision on the latter was first voiced, Titan was kept alive solely *to maintain a competitive lever on Convair*. Besides, said



one officer, "You'll save only $400-million if you cancel it.")

Another example: On the now-operational Matador, said one military expert: "Regulus and Matador were developed with essentially the same range and accuracy and warhead capabilities. They were powered by the same jet engines. For the same dollars that were invested in these two systems, we could have had a 25% greater military capability with a single system."

But, say the "change advocates," merely doling out more money is not going to improve the situation. There is such a gulf between stated policy and what people actually are responsible for, and national programs are so broad, that the environment permits everybody to do everything "he can possibly steal a dollar for." If you say "we need a strategic response" everybody agrees. But when Congress asks Defense "how much do you need for what?"—bango, "we go off in all directions."

Another Reason

Another reason for change: today we must have a single source of military decisions which is supposed to be in the JCS arrangement. In World War II, field commanders were directing field forces at aggressive spots all over the world. Today our military organization is still far-flung but its effort is being concentrated on one enemy, essentially, (the Communists) and this requires concentrated direction.

Each service feels responsible for doing too much of the job. And the only way to keep them in line is by gradual encroachment of civilian decision makers into purely military areas—an obvious, and undesirable trend of recent years.

And the organizational scheme of 1958 which provided command of unified forces through the Joint Chiefs of Staff with support coming from the military departments guaranteed only one thing: unified commands now have all the essential elements of command except the ability to make a decision, while the services retain an almost deadly grasp on decision-making but without any major combat forces under them.

Those who defend the present system are legion and their argument boils down to: "If it doesn't work it's because of the people, not the organization." Counterpoint, to the demands for drastic change, has been evolving for so long and with such detailed attention, that those hunting favorable arguments need only refer to their high level spokesmen, most of them key members of the current organization:

From ex-JCS Chairman Twining:

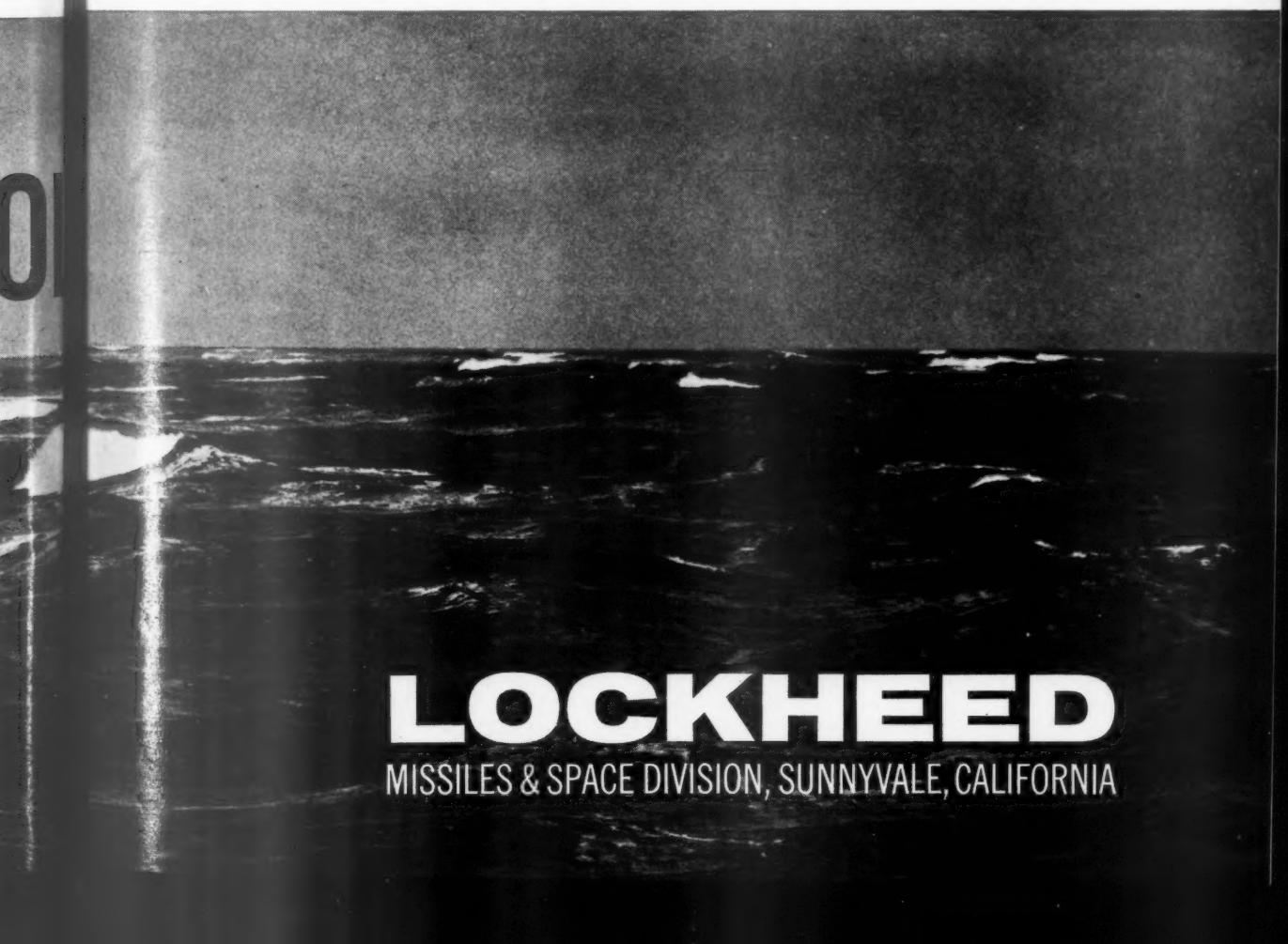
"A great deal has been said about various proposals to create a single Chief of Staff, merge the services, do away with the separate military departments as such, or divorce the Joint Chiefs of Staff from their responsibilities as head of their respective services. Frankly, I oppose them as not workable and not necessary.

"On the principle of subordination of the military to civil authority, we have it now, and in the domain that it belongs—the domain of policy, not of operations or professional technique. It takes a life-time to become a good professional in any of the services, and I for one don't wish this changed by an attempt to create some sort of all-purpose military man."

From new JCS Chairman Lemnitzer:

"It has been suggested by some that the present system is unwilldy and lacking in unity—in short, that instead of the Joint Chiefs of Staff system, a single Chief of Staff would be desirable. Some even advocate a single military service.

"During the reorganization studies and deliberations of post-World War II

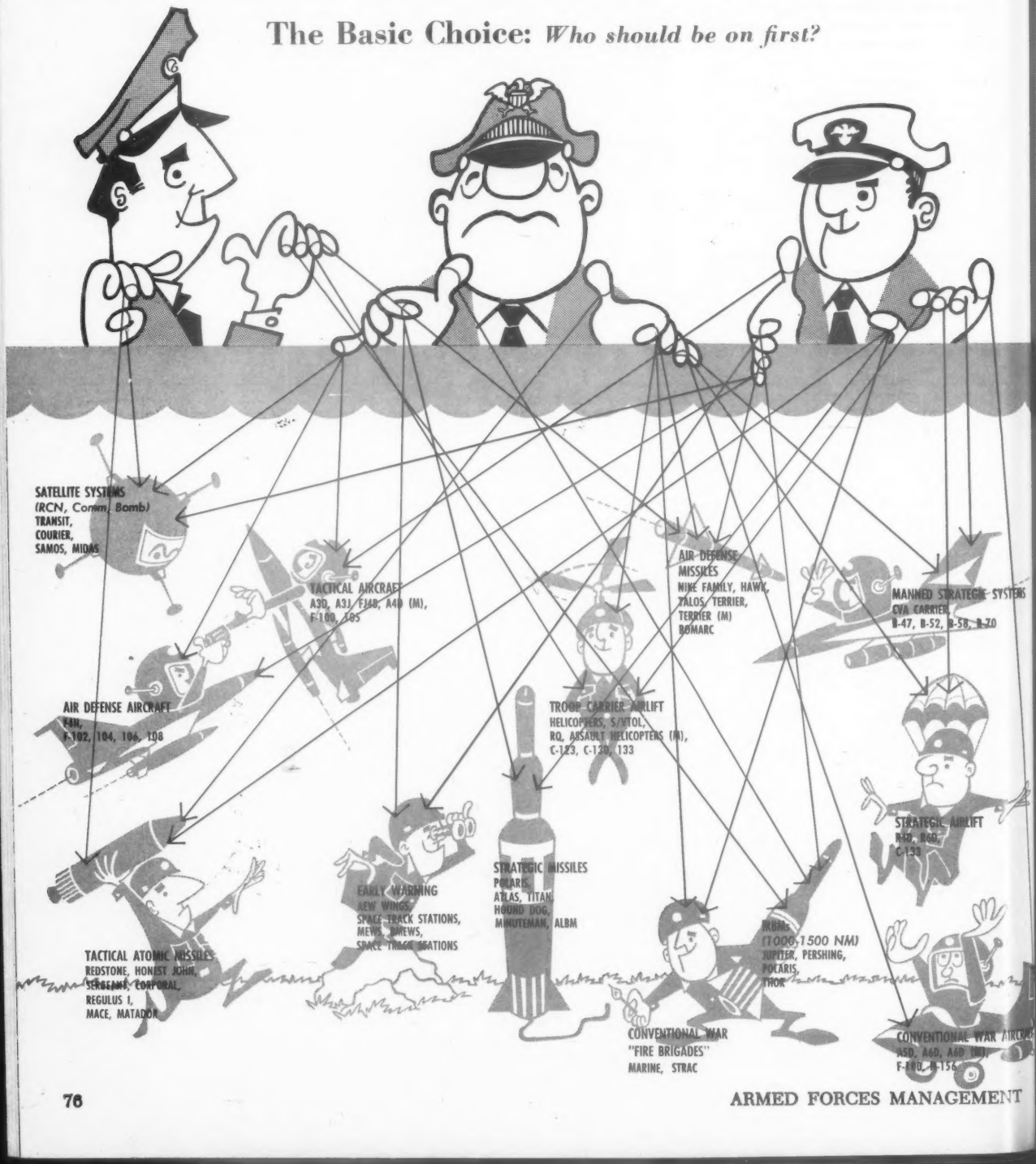


years, two fairly distinct schools of thought emerged concerning the course the new organization should take. These two schools of thought have continued, in different variations, to exist throughout the post-war years and to influence our military thinkers. They have had considerable influence on the establishment of the Joint Chiefs Organization.

"The first school of thought emphasizes centralization of authority within our military establishment. Its proponents have, at various times, recommended that there be a single chief of staff for the Armed Services, or a military 'commander' of the United States Armed Services. This philosophy also stresses greater centralized authority in the civilian leadership of our defense establishment. One proposal reflecting this thinking called for a Secretary of Defense with Under Secretaries for the Army, Navy, and Air Force. In its extreme form, this philosophy advocates a single, completely integrated Department of Defense in which everyone wears the same uniform.

"The second school of thought takes quite an opposite view. It emphasizes greater autonomy for the military services within the Department of Defense structure. Military men of this conviction recognize the need for coordination of effort on the part of the Armed Forces. However, they favor the technique of *cooperation and coordination* among the military services, rather than control by a central authority. Proponents of this organizational philosophy oppose the "single chief of staff" concept with its attendant centralization of authority in the hands of one individual. Rather, they favor continuation of the current Joint Chiefs ar-

The Basic Choice: *Who should be on first?*



rangement, under which each military Chief of Staff has an equal voice, and which permits solutions to problems on a joint basis.

"Now, each of these philosophies has its merits and deficiencies. My own view is that you must consider, when attempting to evaluate these philosophies, the military level with which you are dealing. Considered from the level of the unified commander in the field—the commander who must coordinate the efforts of the Army, Navy, and Air components in actual battle—there is a requirement for centralized authority. Experience has proved beyond any doubt that military operations in the combat zone must be directed and controlled by a single commander.

"On the other hand, the Joint Chiefs of Staff, operating at the seat of government, are required to deal with problems which are much broader in scope than those confronting field commanders. The Joint Chiefs of Staff, unlike the unified commander, are not so much concerned with immediate problems affecting the outcome of local battles. Rather, they are concerned with the overall strategic planning and the direction of overall military operations.

"Modern military problems—especially those tri-service in dimension and global in scope—are so complex and varied in their ramifications that they defy solution by one man, no matter how experienced and wise he may be."

From today's Army Chief of Staff George Decker:

"The Army believes that the existing Defense organization is basically workable and sound. The Department of Defense underwent reorganization only about a year and half ago. It has not had sufficient time to achieve its full operating effectiveness. The Army thinks that it would be premature to make further legislative changes within the current system, but we believe that these can be undertaken administratively by the Secretary of Defense as their need is recognized."

"Like practically everyone else, the Army has some definite ideas on the organization of the Joint Chiefs of Staff and the Services. Current Army views can be summarized as follows:

"We do *not* favor the establishment of a single Chief of Staff.

"We do *not* believe that the members of the Joint Chiefs of Staff should be divorced from their respective Service responsibilities.

"We do *not* believe that the Nation's most important defense problems can be solved by merging the several Services under any system that would destroy their identity. The Army believes that any such merger would be illusory at best. Sooner or later, such a single Armed Force would have to be subdivided into elements not unlike the Services we now have."

From Chief of Naval Operations Arleigh Burke:

"I have been watching with some concern as the several public pressures toward centralization and authoritarianism in defense begin to mesh together to form a single pattern.

"Every one of these proposals should be carefully examined. I would favor constructive changes but, before we make any changes, let's be sure that they will actually improve our method of arriving at proper decisions. There are many things other than organization which contribute to the success or to the smooth operation of the decision-making process. The entire process is limited by human mentality. No matter how brilliant, no man is omniscient. There is no organizational or procedural means for removing that limitation.

"There are pressures towards reorganization, and very vocal ones they are, too. The general themes are not new. This is something you will clearly see on careful examination. There are proposals, all leading in one way or another toward more and more concentration of power, more and more autocracy by military policy and military decision, more and more suppression of differences of judgement, and more and more of what is described as "swift efficiency of decision" as a substitute for debate and discussion of the military aspects of national policy.

"I have been opposed to this before, and I am opposed to it now. I cannot and will not believe that military policy and military decision should control or limit national policy or national decision.

"We are told that we need some better kind of military decision. Faster decision? Wiser decision? If we believe that one man, a military Solomon, is necessarily wiser than many men, then why not carry this logic further—why not carry it to its almost inevitable conclusion and abolish the Congress, make the peoples' elected Chief Executive a figurehead, and place our future in the hands of a single military National Protector?

"There are four of us serving as chiefs of our services and we—together with the Chairman—are the Joint Chiefs of Staff. We each have different patterns of thought, we each have different concepts, we each bring different skills, different information, and different experiences to our common council and to the President and to the Congress and to the United States.

"This competition of differing views is the great asset of the Joint Chiefs of Staff system."

Air Force Chief of Staff, Thomas White, obviously does not appear in the above blue chip group for in recent years he has not commented publically on defense organization. However, among the top figures, an inference that White is the leading supporter of reorganization probably would be correct. But below the top level, it is virtually impossible to draw clear cut lines of "for" or "against" on the basis of the uniforms they wear.

Significantly, every time Defense has bumped into a critical problem, they have handled it with some type of joint agency: communications, strategic planning, more and more in procurement. But, changes are evolutionary rather than revolutionary.

"We are chipping away at the real problems by bits and pieces," said one general. "This is only compounding the headaches rather than curing them." His example: Providing Dr. York with far-reaching power has actually increased, rather than decreased, personnel (at Service levels) and layers of coordination (at all levels). Instead of ironing out problems, York's technical people generate questions which require a like, if not boosted, number of people at Service staff level to come up with rebuttals or answers.

Other advocates of a shake-up can point to the same type of staff duplication elsewhere, contend the idea of four people doing one man's job must end—since, in practice, one man (usually in a joint organization) does the work. The other three dream up reasons why it isn't "compatible with our (or somebody else's) Service responsibility."

It seems clear that a DOD poll would show a majority of people in favor of some change. They go several different directions when asked "in just what ways." But there is mounting Congressional concern over Defense operations and growing indications they are getting fed up with the lack of cohesive answers to their questions. There are growing indications, too, that powerful men working in the system (with a bellyful of the waste and wheel-spinning) will force the issue in 1961.

Who wins this debate and how well is, at this point, hard to predict. What is a safe prediction is that there will be changes. Whether they will be gradual or dramatic is not certain. ■

NATO: The Longer We Wait....

NATO is embarking on a period of accelerated transition. But the U.S., recognized leader of the Alliance, has not been sufficiently dynamic in preparing for the changes. Our risk: the longer we wait to make the necessary decisions, the harder we fall from favor among our allies.

NATO *forces work together in joint exercise maneuvers. NATO headaches are politico-military rather than military alone.*

A USAFE *flight crew rushes to its Douglas B-66 bomber. This is one of many units that maintains an ever-present state of combat readiness.*

RETURNING to a landlocked liaison job in Frankfurt, Germany, a Navy captain said recently, "On a piece of paper, I can outline, with very little trouble, how the NATO organization is supposed to work. But if you can find the key to what those boxes mean, who does what for whom and why, you will become the most sought-after man in Europe."

What makes NATO run is hard to pin down. An organization chart, several hundred thousand employees, some office buildings, a series of military defense teams, and an impressive amount of hardware do not necessarily explain, at least in this case, what NATO is.

NATO-committed forces are commanded by the providing nations (except in Germany) in peace, are under NATO control in war. Consequently, in peacetime, who is calling the shots is not always clear. Militarily, Europe is overrun with two-hat wearing commanders.

NATO's organization is a confusing rabbit warren of criss-crossing coordination channels and lines of authority. Its labor force is like a slice out of the United Nations. Its facilities and hardware are spread all over the European map and sometimes appear to be just as tenuously controlled.

NATO is, after all, only an idea in the minds of several varieties of men who speak different languages, come from different backgrounds, different social, political, and national groups. Any one of the members, if he is of a mind to, can cripple some portion of the organization's efficiency or effectiveness any time he likes. (As some have, to prove a point. Example: De Gaulle—to establish that France is becoming an atomic power—demanded last year that all vehicles on French soil, capable of delivering atomic weapons, be under French control. The result was operation Red Richard,

The Signs of Starvation

FEW MILITARY PLANNERS, even those strong disciples of the "big bullet," will argue that increasingly we will need Europe's contribution to add to our own in the 1960s to maintain at acceptable cost an adequate East-West deterrent balance.

But the major power, the U.S., is being pulled in two opposing directions: Has technology permitted a force reduction? Or do the field units just need more money—because clearly finances provided will not support programs promised.

What can happen when planning, and even programming, don't keep ahead of the changing environment? To anyone who has spent time in Europe talking to the *military* men about their problems, NATO's military organization is a classic case in point.

Trapped between the upward pressures for change and an immovable head-conking lid on resources and requirements, members of the U.S. part of the military team are beginning to twist and squirm.

Operations

Preparedness is generally pictured as being "not as bad as it's been described but not as good as it should be." One operations officer, asked which problems were his toughest, answered, "That's like asking which set of sewers is worse." In essence, the problem amounts to trying to do a mushrooming job with fewer and fewer resources.

Chief complaint: "Like insurance, we've been maintaining a force on the basis of what we can afford, not necessarily, from the commander's point of view, what we need." Geared to a certain operational level and maintenance consumption, a dollar shortage means some operations and training can't be done.

Then too, some Allied Army units have a long way to go before they acquire the knack of fighting on an atomic battlefield. Example: During Operation Winter Shield last year, German commanders told units to "go out and take so-and-so hill. I don't care how you do it, just let me know when its done." To the U.S. Army, this sort of vague direction is cataclysmic, could result in dropping an atomic weapon on your own units.

Air Force operations people are concerned, at the present level of support, with being able to hit all the targets they are supposed to hit if the balloon goes up. A few even hinted that the "lower priority" targets on the list could be, or already had been, dropped off the list.

Supply

Here is the most obvious check on preparedness strength—and the complaints outnumber the kudos. On the bright side, a dollar squeeze has forced managerial advances such as the Third Air Force Supply Improvement Program (see July AFM, page 60), Army's efficiency efforts in its Com Z (see AFM, August 1960).

But the budget squeeze is hurting—most significantly in personnel, parts availability, transportation, facilities. U.S. units are quick to draw the fine distinction that this support squeeze is not affecting capability to perform operational missions. Item: Last year's "firm" Seventeenth Air Force budget later came unstuck, meant a $2-million cut in operating costs. Result, in effect: "We won't repaint the house until next year." Thus, one of the most modern Air Force headquarters buildings anywhere can't afford filing cabinets. "This doesn't affect our ability to fight, but it does affect our efficiency and general level of effectiveness."

Item: Army in Europe has been told it can look for a 5% wage raise each year for the thousands of German employees it uses, has no way legally of providing for this in its budget request.

Training

Big headache in preparedness is the lack of training facilities. There are only a handful in Europe and they are chock full of people all the time. (Real estate is at such a premium that the Dutch, for instance, put their troops on a train and ship them all the way to the South of France for maneuvers.) Observed one colonel, "Seventh Army training centers are like hotel beds in a boom town—they never have a chance to get cold."

Lack of space, and the very real people-to-people problem of maneuver damage sometimes result in artificial, test-tube type instruction. Item: Any tracked vehicle going over 50 miles must move by rail or truck transport. Item: There is only one training reservation big enough to take tanks, big guns. But that same reservation (Grafensworhr) is the only one that can handle infantry maneuvers of an atomic-battlefield nature. Outcome: "Our infantry is playing football in the front hall closet." One alternative: "We use some very fine training films of actual combat."

Air Force faces many of the same problems: bad weather, crowded, congested air traffic over practically all of Europe. (Pittsburgh has supposedly the worst flying weather year around of any city in the U.S., is still better for "clear days" than the best city on the European continent.)

Wrap-Up

All these problems boil down to just one, put most succinctly by an Air Force general, who said, "We are committed to 21 squadrons, given the money to finance only 18. Should we spend the money to fulfill honestly our commitments or has the technological advance made it possible to do the same job with only 10 squadrons?" ■

The NATO Layout . . . .

THE NATO COUNTRIES
1. BELGIUM—2. CANADA
3. DENMARK—4. FRANCE
5. FED. REP. OF GERMANY
6. GREECE—7. ICELAND
8. ITALY—9. LUXEMBOURG
10. NETHERLANDS
11. NORWAY—12. PORTUGAL
13. TURKEY
14. UNITED KINGDOM
15. UNITED STATES
NATO COUNTRIES
SOVIET BLOC
On April 4th, 1949, the North Atlantic Treaty was signed by twelve countries. It contained a clear warning to any would-be agressor: an attack against any of us shall be considered an attack against us all. Three years later Greece and Turkey joined the Alliance, and in 1955 the Federal Republic of Germany became NATO's fifteenth member.
NATO COUNTRIES
SOVIET BLOC

i.e. USAF moving fighter units elsewhere—at an unprogrammed cost of $4-million plus.)

The most significant historical observation about NATO, over a decade after its founding, is the surge of mutual confidence, the psychological endorsement of the NATO idea by the military men of all nations involved. This mental attitude, if you will, tends to make NATO today what it was supposed to be on paper months and even years ago.

But if NATO can point with pride today, it could stumble and falter and fall backwards tomorrow. And some members, i.e. the U.S. Air Force in Joint Chiefs deliberation, European nations in NATO conferences, are beginning to complain heatedly that NATO is doing just that, that U.S. leadership is not living up to the original philosophy.

One of the key reasons NATO has been a long time (over 10 years) getting cranked up is that America has had, rightly or wrongly, a reputation among European nations of being, in any alliance agreement, a sort of reluctant bridegroom. Thus the NATO philosophy, i.e. each nation contribute the part of defense which it is best able to provide, is only now reaching anything like fruition.

Fears

Most nations in the Alliance have been torn between the desire to fulfill the NATO philosophy and the very real fear that if they didn't build a sort of total military entity, in effect a miniature model of U.S. strength, some day their rich uncle across the water might conceivably leave them high and dry.

Not quite as strong today, the fear persists. Many Europeans wonder "would the U.S.A. risk the destruction of its own cities in response to a threat directed solely against Europe?" On more obvious terms: "Would we trade Chicago for West Berlin?"

Impressed by our performance in Berlin, Quemoy, Lebanon and elsewhere, the European is slowly being convinced that we are in NATO to stay. Nevertheless, they still contend that a nuclear deterrent entirely under American control no longer meets NATO requirements, at least in the cold war tussle of day-to-day events and relationships.

General Lauris Norstad mentioned the possibility of NATO becoming an atomic power last December. The primary headache: how to fulfill the obvious need of giving NATO strategic muscle, still provide the central control necessary to keep individual members from firing in individual, irrational anger. This is a wide open question. The answer ties, among other things, into future U.S. arrangements to provide medium range ballistic missiles to Europe.

It ties in, too, to any discussions of how strong the (primarily) conventional "Shield" forces should be. The reasoning of advocates for force-structure change: If shield forces have a nuclear capability there is a better-than-even chance this would deter the Soviets from using such weapons. Thus, European nations would jump into NATO with both feet. It would provide their only reasonable chance of avoiding nuclear devastation.

The Complaint

It is obvious that NATO cannot stand still, equally obvious that many problems will face the Alliance in the next ten years. But the Alliance in the past ten years has shown a viability that is astounding—in view of the organizational maze through which its members must fight, even more astounding in view of the present technological revolution.

Now even more than in 1948 (when the U.S. was the prime motivator and contributor to the arrangements which denied Western Europe's potential to the Soviets), U.S. security interests are best served by deploying soundly improved forces in forward defensive lines in Europe—rather than playing a lone "fortress America" hand.

But the complaint in a nutshell—even among the military experts of our allies: The political importance attached by the U.S. to meeting its NATO requirements has indicated a force structure which detracts from and compromises the muscle really necessary for collective security. In effect: The Defense Department decision that "it is inadvisable to introduce changes in the U.S. NATO commitment at this time" is purely political.

And therein lies the heart of all the problems NATO has faced and probably will face. The headaches are politico-military rather than military alone. Far more often than not, sound military ideas die aborning when the high level NATO politicians get hold of

WEAPON SYSTEMS BY REPUBLIC'S MISSILE SYSTEMS DIVISION

Bridging the scientific and technical gap between military necessity and tested, proved, reliable weapon systems is the task of Republic's Missile Systems Division. Our scientists and engineers plan, direct, and supervise projects from conception to operational hardware... through systems synthesis and analysis, research and development, prototype fabrication, test, and production. ➤➤➤ Republic designs and builds completely integrated systems for performing vital defense functions.

Present programs include work in:

- **Air/Space Vehicles**
- **Guidance and Control Systems**
- **Infrared, Radar and Photographic Sensors**
- **Data Processing and Display Equipment**
- **Ground Support Equipment**
- **Secure Communications Links**
- **Nuclear Weapons Phenomenology**

REPUBLIC AVIATION

MISSILE SYSTEMS DIVISION

MINEOLA, LONG ISLAND, N. Y.

them. What rankles the crusaders for change even more is that the political fears are largely groundless—in their opinion—and the pressures for change are considerable. And even more than *that:* the pressures have nothing to do with Russian Premier Khrushchev. But in bending to them in a plodding, forceless way, we are allowing Khrushchev to take propaganda credit for things that are going to happen anyway.

For instance:

1—The Soviet threat continues but is shifting and becoming diversified into many new forms of military, economic, and political power. With this diversification, the nature of the cold war threat to NATO also will change in the 1960s.

2—The balance of power within the Alliance is changing. The U.S. is still far wealthier but the growth of European resources gives our allies a greater burden-sharing ability and right to a greater voice in Alliance affairs. (Examples: the revival of West Germany and the advent of DeGaulle.)

3—Technological pressures—the minimum essential force requirements for NATO (outlined in NATO Planning Document MC 70) are at least four to five years old, make little allowance for missile delivery capability, are concerned solely with those forces *specifically* committed by each nation to the Alliance. Thus, U.S. strategic strength such as SAC and the Fleet Ballistic Missile Submarine are not considered even though they could, in fact, comprise a considerable added strength to NATO.

4—Economic pressures, i.e. the "cost squeeze." While commitments have remained level and the budget, at least in the U.S., has stayed level, the costs of the hardware itself have ballooned. Example: the F-80 cost $100,000 when we agreed to provide so many fighter aircraft to NATO. We still must provide, theoretically at least, the same number of aircraft but the F-104 costs $2-million.

5—The changing scene in military strategy is applying pressures for a change in the sword and shield concept. In effect, say proponents of "dynamic new thinking," we should retain the basic concept (a Shield to run border reconnaissance checks, provide a buffer against conventional aggression), but multiply the tactical retaliatory sword and give it, basically, a more powerful, far-reaching strategic capability. Said one officer: "If Khrushchev is upset about our bases ringing Russia, he would have a real fit if we put a strategic, and not a tactical swordring all around the Shield."

The problems which will face NATO in the '60s are too vast, too important, and too complex to lend themselves to easy solution. But, as a generalization, the danger that appears to confront NATO in the '60s is that it might fail to exploit the diversity of the skills and resources of the member countries in matching the Soviet challenge.

More specifically, the U.S. particularly seems slow to back up its admirable philosophy that our allies should eventually, be able to carry most of the load themselves. Our acts bely a reluctance to lease the big punch, i.e. nuclear energy, to anyone but those (Britain) who already possess it anyway.

Generally speaking, the legitimate aims of NATO and its members are three:

1—To contain the expansion of communist influence throughout the world;

2—To create the conditions in which it may be possible to contemplate the liquidation of NATO through the creation of a better system of European security than now exists;

3—To develop a political and military position which will permit the negotiation of a general agreement on arms control to replace the precarious balance of today—a balance which will become more and more tenuous and insecure if technological progress in weapons of destruction continues unchecked and uncontrolled.

Deterrent

Only under the umbrella of an effective nuclear deterrent is NATO able to consider the possibilities of deterring or prosecuting limited war and/or meeting ambiguous threats (that is, communist attempts to chip away real estate on the edge of NATO by not necessarily military means. NATO's military arm is its most publicized, but it is important to remember that NATO is supposed to encompass a great many other things, economic, social, etc., as well.)

The answer obviously is to give NATO a large strategic capability. But this answer is not quite as simple as it first appears. The advocates of change indicate that all the member nations want this strategic capability pumped into the arsenal, possibly in the form of a theatre area command.

But with atomic warheads, a strategic capability can hardly be doled out on an open market basis. Just as in the U.S. strategic setup itself, there must be a central control within NATO or, said one general, "You have too many guys calling the shots—and we are not going to have much time to call a conference."

On the other hand, the clearly predictable course of events establishes that member nations will begin to acquire a strategic atomic capability all on their own. Thus, if the U.S. continues to sit on its hands, autonomous nations will be able to rattle their rockets without obligation to anybody. The chaos that could create is obvious.

Takes Time

Only concrete effort we've made toward "leadership" in the past year has been a somewhat ambiguous recommendation by Secretary of State Christian Herter that NATO plan ten years down the road and not just year to year.

The urgency to put some drive behind NATO leadership is paramount. One big reason: It takes time to get things done in NATO. Item: Even fairly routine proposals sometimes take as much as a year to circulate through member nations, twisting and revising to individual member feelings and getting final approval. Item: The NATO Maintenance Supply Service Agency, created on paper over two years ago, to centralize the job of supplying and maintaining weapons for NATO, only recently took over its first operational depot—at Chateauroux. Item: At least one proposal for pooling research and development talent (in the ominous new area of anti-submarine warfare) has taken a year to jell and the research facility—at La Spezia—is still not fully staffed.

Not only does it take time, but time is needed to take. If for no other reason, there is the very critical need of explaining full and completely to the populations of our allied nations—who sit on the doorstep of the communist threat—just what is going on. If we expanded the NATO strategic base, the result would be a cutback in some of the buffer forces needed to do the shielding job. (Since part of them, at least, are now doubling in brass as limited-range tactical forces.)

Moving one American soldier out of West Berlin or one airplane out of Wiesbaden, Ger., could have a deadening psychological effect on the European man on the street—unless he knew well in advance the whys and wherefors. And, so far at least the U.S. has done neither the preparatory work nor faced up to the clear new rules of the game, i.e. we are no longer playing the "deterrence" trump cards all by ourselves. ■

TREASURY
STATE
USRO
DEF REP NAMA
NORTH ATLANTIC COUNCIL
MINISTERIAL SESSION
PERMANENT SESSION
DEFENSE
MILITARY COMMITTEE
CHIEF OF STAFF SESSION
PERMANENT SESSION
STANDING GROUP
TO U.S. MEMBER
TO U.S. MEMBER
TO U.S. MEMBER
JCS
1 U.S. CINCEUR
1 SACEUR
CUSRPG
CHANNEL CMTE
2 SACLANT
TO U.S. MEMBER
2 U.S. CINCLANT
3 CINC USAREUR
4 CINC NAVEUR
4 CINC USAFE
3 CENTAG
CINCNORTH
CINCENT
CINCSOUTH
CINCAFMED
ALFCE
ANFCE
AAFCE
ALFSE
ALFSEE
5 STRIKE FORCE SOUTH
AAFSE
NORTAG
2 ATAF
4 ATAF
U.S. SEVENTH ARMY
SETAF
5 U.S. 6TH FLEET
NATO COMMAND LINES
U.S. COMMAND LINES
MATCHING NUMBERS SHOW U. S. & NATO FORCES COMMANDED BY THE SAME MAN

SEATO and Deterrence

Why the Emphasis is on Map

THE SIGNIFICANT difference between the North Atlantic Treaty Organization and the South East Asian Treaty Organization is simply this:

Member nations in NATO are bound to mutual defense under the most uncomprising terms—an attack against one member nation is an attack against all.

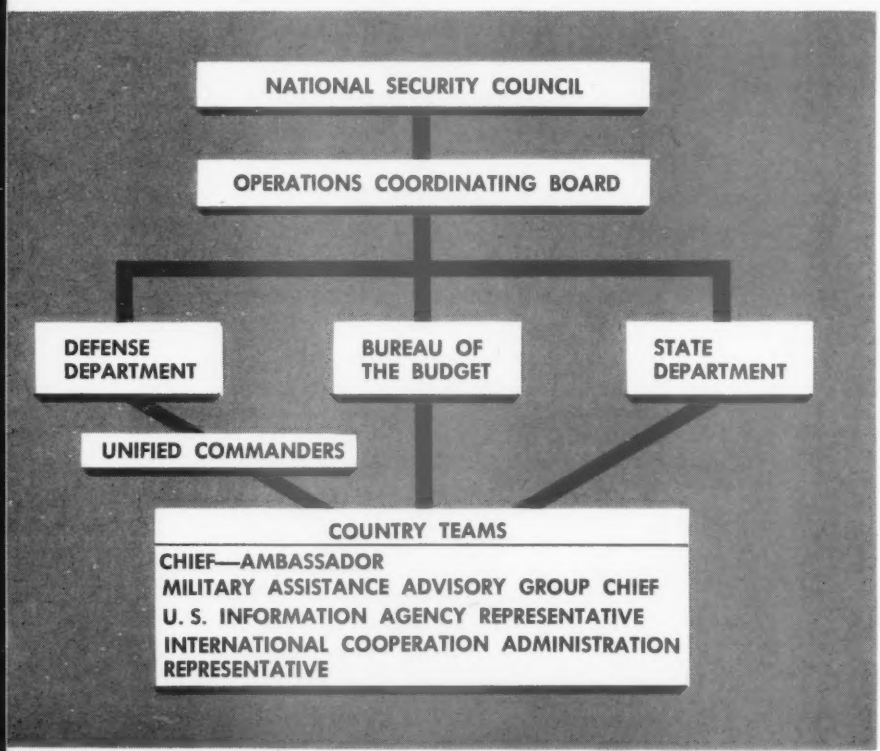
In SEATO there is no such specific commitment among member nations (although each member undertakes to respond in accordance with its constitutional programs). But even without this, there can be no question that SEATO forms one of the most important links in the free world collective defense agreements. The nations who are members of SEATO are perhaps closer together today than they have ever been, and the ties are growing stronger all the time. Being geographically remote from the United States, SEATO has seldom been given the close look that it deserves.

Few people realize, for instance, that the SEATO treaty is the only one of its kind that recognizes—in explicit terms—the subversive (as opposed to the Military) threat to member nations. Clearly, the majority of Communist gains have come through means other than open war, and the likelihood of more of the same tactics is great.

Put in context, the stake the United States has in the Pacific is in some ways more vital to its own interests than that in Europe, and a mistake too often made is to sell SEATO short.

Among the misconceptions: That SEATO comprises not much more than the Seventh Fleet; that the nations involved do little besides draw Military Assistance Funds, and contribute little or nothing to collective security; that Europe is the major area of conflict with Communism, to the exclusion of all else; and that all that is involved in the SEATO alliance is a few islands scattered over the Pacific.

Top Advice for Map . . .



The factual side of the ledger presents a slightly different picture.

While Navy's Seventh Fleet comprises an imposing umbrella under which SEATO operates more effectively than would otherwise be the case, the forces that are supplied by the other SEATO nations are tremendously effective in their own right, and provides military forces in place as a deterrent to Communist aggression.

Nationalist China, for instance, has what is perhaps one of the most modern Air Forces in the world today. Although not a member of SEATO, its forces are a big element of strength in the SEATO area.

If a large share of Military Assistance money paid out by the U.S. has gone into this general area, it is equally true that the returns—in terms of a stronger free world—have been equally high.

(It costs the U.S. about one-sixth as much to provide the aid for a SEATO nation to field a division as it would to field one of our own.)

Besides outright military strength built up through Military Assistance, the nations who have drawn on this account have become markedly stronger in terms of their internal security and economies.

From a technical standpoint, participating nations have developed skills among their own people that simply never existed before, and which, again, must be counted on the asset side of the ledger.

Case in point: Japan, although not a member of the SEATO pact, has in fact developed its technology to the point where it seriously rivals the United States in many fields.

In terms of emphasis, Europe and the NATO alliance have traditionally received the lion's share of publicity, the most fixed attention of the American public.

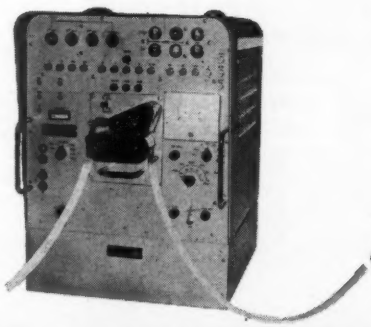
But a quick rundown of the hot spots that have cropped up in the past few years points unmistakably to the Far East: Quemoy, Korea, Indo-China, Tibet, India.

As a sort of footnote, it is apparently often forgotten that World War II was, for the U.S., touched off in the Pacific—only later were American shots fired in Europe.

The "handful of islands" involved in the Pacific make up some 12-million

Lavoie ROBOTESTER

FROM THE GROUND **up**



The Robotester's Failure Isolation capability puts it on the front line in the battle for absolute reliability. Up to 100 circuit tests per minute can be made with the basic unit. Robotester provides split second recognition, isolation and identification of abnormal functions between any two of 250 circuit points by high speed sampling and comparison. Automatic operation stops when out-of-tolerance value is met, and digital read-out identifies the isolated, faulty circuit.

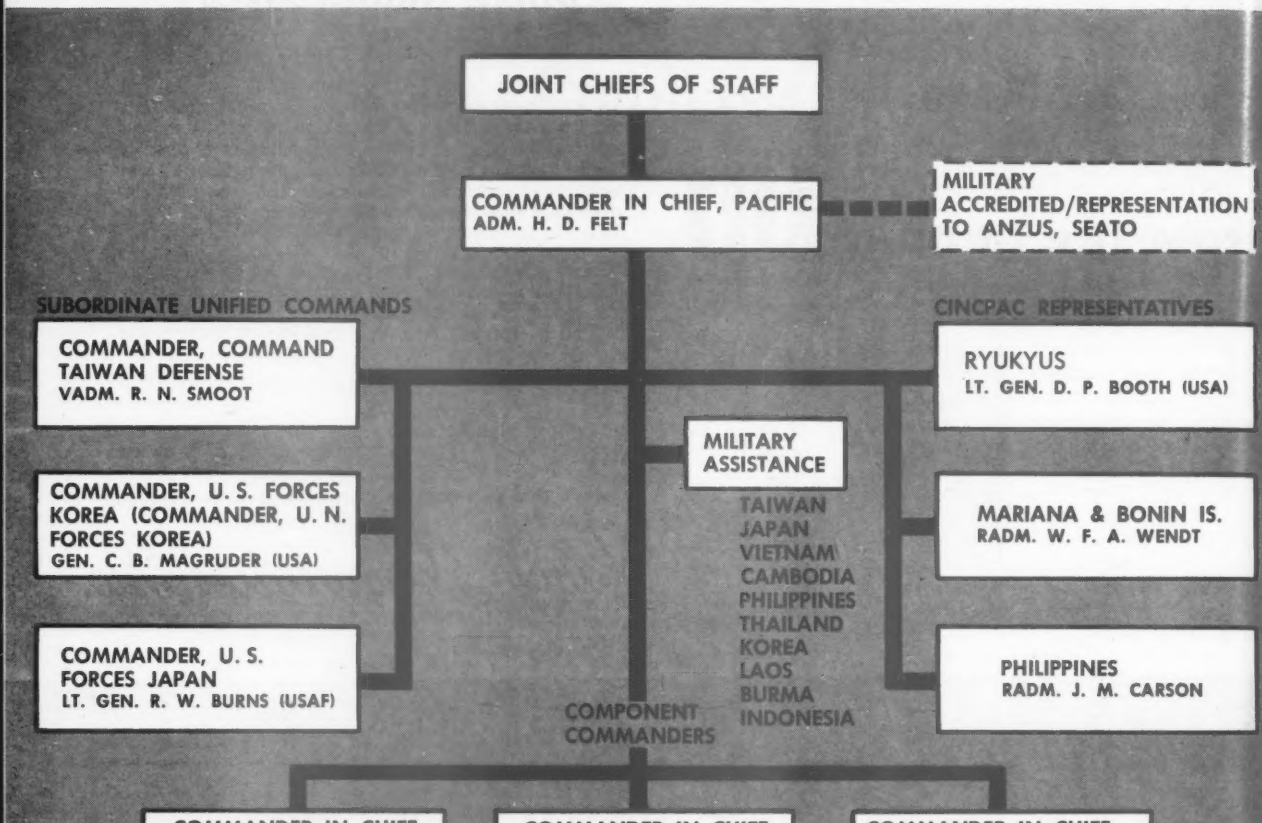
Accuracy and high speed, with fast set-up and changeover, are the essence of Robotester. Tape-programmed acceptance standards guarantee versatility and flexibility.
Robotester accessories extend test capabilities to meet complex problem configurations.

Measures:	Resistance, Insulation Resistance Voltages AC & DC Impedance
Tolerances:	1%, 5%, 10% and 20% nominal.

Write for complete technical information and applications booklet.

Lavoie Laboratories, Inc.
MORGANVILLE, NEW JERSEY

The Military Breakdown . . .



sq. miles of land mass. Total area is some 85-million sq. miles, stretching from the Bering Sea to Antartica.

To support an organization of this size and importance is no easy job, and the work that has gone into building the strong position that exists today has been prodigious.

The myriad of U.S. organizations and representatives alone—coupled with directly or indirectly supporting treaties—make a fair indication of what is involved.

Besides SEATO itself, the U.S. has in this area of the world a strong agreement with Australia and New Zealand, along with separate treaties with Japan, the Philippines, Nationalist China and others.

Besides the Defense Department stake in the area, there are a considerable number of other agencies with interests in the southern Pacific.

Because of this, most U.S. international business is done under what is called the Country Team system. Basically, the Country Team aims at a coordinated effort in U.S. dealings with a given nation.

Headed by the U.S. ambassador, the Country Team consists of the Chief of the country's Military Assistance Advisory Group, the director of the local U.S. Information Agency office, and the chief of International Cooperation Administration affairs in the country.

Plainly, the climate created makes it actually hard to do something without setting up whatever coordination is necessary with other agencies of the government who have an interest.

The efforts of the United States in the Pacific are clearly of vital interest to the nation. It is not simply a defense problem—although this is a major part of it. The interests are of a truly national nature, and the treatment of the area is indicative of this.

Commented one Army officer at the beginning of an interview, "I hope you don't expect me to talk about the Army in the Pacific—we are truly so unified out there that you can't separate the services. And to be honest, it is sometimes hard to talk about what is purely Defense Department—State and just about everybody else has a hand in most of the action."

Only in this context is it possible to look at what Defense—through the Commander-in-Chief-Pacific is doing in the Pacific, and with its unified command that is charged with more area of the world's surface to protect than any other.

Major areas of consideration of the Defense Department fall into about three general categories—CINCPAC itself, the Military Assistance job, and the Defense job in terms of holding up the U.S. and of the various treaties and agreements in effect in the Pacific.

Under CINCPAC itself (see chart), there is both a functional and a service breakout of the organization. The services are represented as such by Commander, Pacific Air Force; Commander-in-Chief, Pacific Fleet and Commander, U.S. Army Pacific.

Working on the next level of command under CINCPAC are the three

Subordinate Unified Commanders in Taiwan, Korea and Japan.

(As another measure of the interrelated nature of the Pacific operation, Gen. C. B. Magruder, Commander of U.S. Forces in Korea, also serves as commander in chief of residual United Nations forces in that country.)

The subordinate unified commanders act basically as deputies for CINCPAC, controlling U.S. forces in their respective areas. The measure for the job is the size of the force on hand, and these commands provide the major part of U.S. military strength in the Pacific.

Job of Reps

CINCPAC Representatives are established at what is basically the next level of command. They are set up wherever there are significant segments of two or more services, but not large enough forces to call for a subordinate unified commander.

The three CINCPACREPS cover the Ryukyus, the Philippines and the Mariana/Bonin Islands. Okinawa—in the Ryukyus—is set up with a government which includes the CINCPACREP as High Commissioner, offering one more measure of the diverse nature of the job.

Included in the U.S. Forces in the Pacific area—besides Seventh Fleet—are an Army STRAC unit in Hawaii and AF Tactical Air Command support for both land and sea operations.

Besides his responsibility for the U.S. Forces in the Pacific, CINCPAC also maintains direction of Military Assistance operations in the area. Included under this program are Nationalist China, Japan, Vietnam, Cambodia, Philippines, Thailand, Korea, Laos, Indonesia and Burma.

In spite of the continuing and unfounded cries of "giveaway" that greet the Mutual Aid bills each year they go before the Congress, the work done by the U.S. in cooperation with the SEATO countries and their neighbors along these lines has provided one of the most valuable additions to our overall Defense posture since the end of World War II.

If there were ever any question of whether Mutual Security would eventually pay its own way, such questions could be answered without the least trouble by a careful look into the Pacific.

Case in point: from what could only be called an unhopeful beginning, the Nationalist Chinese forces have been built up through military aid to the point where they are probably one of the most advanced military organizations in the entire southeastern Pacific.

In Thailand, joint maneuvers with SEATO forces supplied by that country became more and more efficient each year. One reason: Thai troops use U.S. map symbols, and even though the maps may be printed in Thai, Americans working with these forces can communicate effectively.

Beyond the help with hardware that is being provided through the Military Assistance programs in the area of the world, an intensive and expanding program of education is being successfully carried out.

Many commanders of the forces that the U.S. deals with are graduates of the best military schools in the U.S. Technical as well as tactical training is being provided by U.S. service schools for a growing number of the recipients of Military Aid in this area.

Give-and-take is probably the most accurate characterization of the military assistance effort. As an example, a combination of U.S. technical training and Formosan ingenuity can rebuild a jeep for about $700. And this is a jeep that would otherwise be surplused by the U.S. A half-ton truck can be rebuilt by the Chinese nationalists for about $1500.

Presently, the Nationalists are looking to even more ambitious projects—tanks, other weapons and communications equipment. Comments one Army General, "it's essentially a combination of outstanding U.S. advisory work and their being more than willing to pick up new ideas."

As a result, World War II vintage equipment is being used to real advantage, with an extremely low washout rate on the rebuilds that are used.

Coupled with the equipment is an unusually high set of standards for such things as training and medical standards.

The total results in this case add up to a force that has successfully withstood Chinese Communists threats.

Further, the U.S. is now maintaining only between twenty and thirty thousand troops on Formosa, and most of these in an advisory capacity. And even this is a number that will probably decrease in the future, as Chinese capabilities improve.

From a technical standpoint, this summer saw the U.S. sign its first Mutual Development Program pact outside of NATO. Aiming for a "wider exchange of scientific and technical military information," the treaty was signed with Australia to "improve our collective military research and development programs and avoid duplication."

The basic aim of SEATO is simply stated:

"The parties, by means of continuous and effective self-help and mutual aid will maintain and develop their individual and collective capacity to resist armed attack and to prevent and counter subversive activities directed from without against their territorial integrity and political stability."

Also, "to strengthen their free institutions, and to cooperate with one another in the further development of economic measures, including technical assistance, designed both to promote economic progress and social well-being, and to further the individual and collective efforts of Governments toward these ends."

Sets Policy

The Council of Foreign Ministers sets policy for the group. Day-to-day policy operations are handled by Council Representatives, at SEATO headquarters.

This council meets monthly or as needed, and is composed of officers of ambassadorial rank. In both groups, decisions are made unanimously, and in the representatives council, a rotating chairmanship shifts each month to another member nation.

The other organizational entities are a Permanent Working Group, a Budget Subcommittee, a Committee of Security Experts, a Committee on Information and a Committee of Economics Experts.

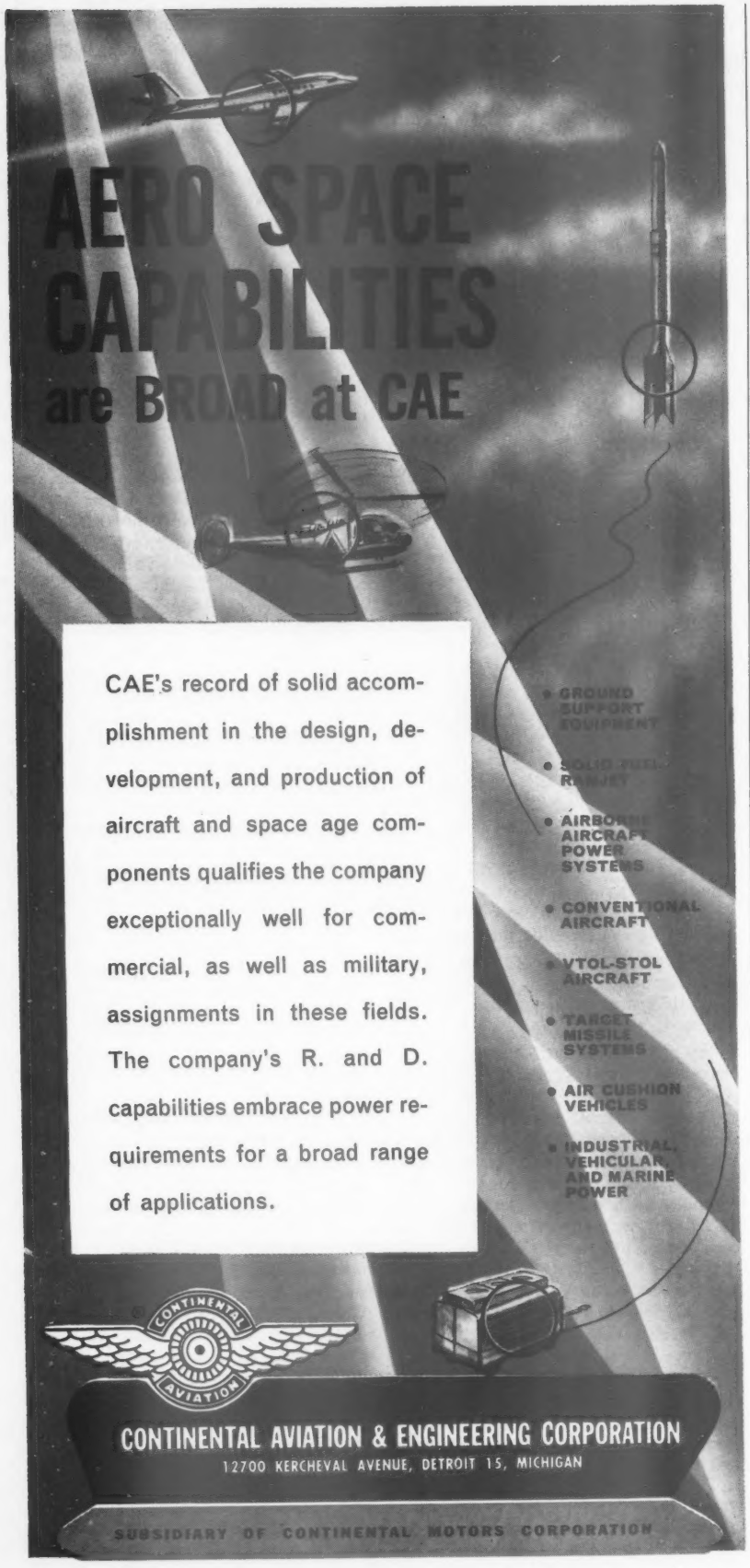
Unlike NATO with its Standing Group of military officers, SEATO has only a Military Planning Group—differing in that the treaty in SEATO's case does not bind the members as does NATO's.

Situated in Bangkok, the Planning Group works mostly with such matters as further standardization of operating methods of participating military forces and setting up joint exercises. About fourteen of these joint exercises have been run since SEATO was originally set up.

Overall military operations of SEATO are under the aegis of a council of Military advisors, who meet about twice a year, and report to the Council of Foreign Ministers.

What this organization manages to do—without the strong military commitments of NATO—is best summed up by Defense Secretary Thomas Gates, speaking to this year's meeting of the SEATO Foreign Ministers' Council in Washington last May:

"The purposes, current activities, and future tasks of SEATO constitute a vital element in maintaining stability in the course of world events. With Communism seeking to destroy all that the Free Nations of the world are striving to build and to maintain, the stability of the Free World depends on the security of each of us. SEATO


AERO SPACE
CAPABILITIES
are BROAD at CAE
CAE's record of solid accomplishment in the design, development, and production of aircraft and space age components qualifies the company exceptionally well for commercial, as well as military, assignments in these fields. The company's R. and D. capabilities embrace power requirements for a broad range of applications.
• GROUND SUPPORT EQUIPMENT
• SOLID FUEL RAMJET
• AIRBORNE AIRCRAFT POWER SYSTEMS
• CONVENTIONAL AIRCRAFT
• VTOL-STOL AIRCRAFT
• TARGET MISSILE SYSTEMS
• AIR CUSHION VEHICLES
• INDUSTRIAL, VEHICULAR AND MARINE POWER
CONTINENTAL AVIATION
CONTINENTAL AVIATION & ENGINEERING CORPORATION
12700 KERCHEVAL AVENUE, DETROIT 15, MICHIGAN
SUBSIDIARY OF CONTINENTAL MOTORS CORPORATION

is based on this concept of interdependence, and is a proud demonstration of its success."

More pointedly, when the South East Asian Treaty Organization was first set up, there were few people who, publicly or privately, acknowledged it to be much more than a paper tiger.

But through the patience and hard work of the participating nations, SEATO has come to represent a powerful factor in the world today.

Perhaps the general attitude in the Pentagon is best summed up by one Navy Captain: "You can't really measure something like this until the chips are down. Today I am very optimistic about what the outcome would be. Frankly, I couldn't have said that two years ago."

If it is unlikely that SEATO will gain any new members in the near future, it is almost certain that those nations belonging to the organization will grow closer together, and a stronger force over the next few years.

And while it is unlikely that such confirmed neutrals as Burma, India and (bound by its constitution) Japan will add their names to the SEATO rolls, it is undeniable that the respect that the SEATO organization commands from these nations will grow in the future.

And the so-called "protocol states" of Indo-China, while barred by treaty from actively participating in SEATO, nonetheless look to the alliance as a means of protection, a means of keeping the peace in their area of the world.

To quote Secretary Gates again, "During its short span of life, SEATO has grown from an idea into an effective organization. National forces of the Southeast Asia countries, backed by powerful mobile forces, contribute to the deterrent and provide the security behind which the free peoples of the area live and develop their resources. Coordinated SEATO military plans have been prepared and are capable of rapid execution to parry any likely Communist threat.

"Through military field exercises, skills have been developed and refined, operating procedures established, and command arrangements tested. SEATO exercises have progressed from simple observer type to the sophisticated maneuvers of land, sea and air units of member nations."

In short, the "paper tiger" as the Communists once called it, has grown a healthy and respectable set of teeth. From inauspicious beginnings, the SEATO organization has come to be an integral part of the Free World Defense system, and one that promises to grow stronger in the future. ■

Defense Research and Development

From . . Research To . . . Hardware

FROM THE FRONT OFFICE windows of the office of the Director of Defense Research and Engineering, this is the way the situation looks:

—On paper, Air Force has what is perhaps the most perfect organization for handling research and development that any of the services can offer.

—Army, with its Technical Services, has what is probably a fairly cumbersome organization. In spite of this, Army seems to come up with the most in the way of results.

—Navy is in a category of its own. Comments one DDRE executive, "Between the Bureau system, the Deputy Chief of Naval Operations for Development, Office of Naval Research, and the office of the Assistant Secretary for R&D, Navy is bucking a four-way coordination problem that would give anybody trouble."

To many people, blunt speaking New England dynamo named Arthur Gilert Trudeau is synonymous with Army Research and Development.

Since he became Chief of R&D in April, 1958, he has earned a reputation within Army for his ability "to get things done," a recognition that is spilling out into other military circles as well. Said one administrator in the Defense Research and Engineering office: "The Army R&D structure is so cumbersome and unwieldy, it takes a man like Trudeau to make it work."

Improvements

Although that condemnation-by-faint-praise is probably overdone, Army has had at least as many troubles as anybody else in the R&D business—in its planning, programming, acquisition of resources, handling its mammoth R&D organization. But, under Trudeau's direction, OCRD has begun, lately to push hard on a variety of far-reaching managerial improvements. While not the sort of thing which makes newspaper headlines, they do promise to improve the odds on success for Army's hardware fountainhead.

To top Army R&D experts, the problems, essentially, are the same as they were several years ago, when the R&D office was just a small part of Supply & Logistics. The difference: "today the problem is how to provide tomorrow's weapons and equipment—and do it in the face of mushrooming costs and rapid technological change."

Thus, how well the program is planned becomes a key to success—or failure—and in the past few months, Trudeau's staff has given a great deal of thought to what causes the planning problem and how to solve it.

The planning goal: clear up the fog which exists today in the ten-to-twenty years-ahead time frame. Said one colonel, "Looking ten years ahead isn't enough with the lead time factor pumped in. Things we are doing now are going to affect what 1975 looks like, but we don't know what war is going to be like in 1975."

"The problem, I guess," says Trudeau's deputy, Major General Dick, "is trying to make some sense out of the old chicken-and-egg business. (Which comes first: military strategy or the science-hardware advances.) If we get planning ten-to-twenty years ahead, we may be able to skip some intermediate steps. By analogy: If Henry Ford had been able to project far enough ahead he might have been able to go from his Models A and T directly to 1960 cars."

To find out, R&D wants to strengthen its check on technological forecasting, focus more Army-wide attention on long range planning.

It is always difficult to move from basic research knowledge to hardware applications. One of the reasons: Military planners (who must decide what will be needed) and the science community (which must project what will be available) must work closely together to forecast accurately the military technological trend—and today they aren't close enough.

A while back, Ordnance Corps set up a small Future Weapons Agency and sent out "bits and pieces of information" to the science community with a "what do you think?" query attached to them. What it thought was going to be a drizzle turned out to be a deluge.

Trudeau is starting a drive to adopt this success to all the tech services. Each tech service is now producing what it calls "problem guides" to give the scientists clues on what the various tech services feel they need. By this and similar communications aids they hope to bridge the gap between the planner (who rarely sees the applications of new basic scientific developments to the military) and the scientists (who rarely are exposed to far-reaching strategic concepts). The reasons the pressure is on for better planning involve the enemy, technology and money.

The Enemy

What a potential enemy is doing in R&D is a vital clue to R&D planners. Hardware advances never stay solely with one side for the length of a war, anyway. (Example: By the end of

Army R&D Gaining Momentum . . .

World War II, the U.S. Army was outblitzkrieging the Germans.) But war's time span has shortened to the point where there is less margin for error. Today, a year or two in development edge may be enough to guarantee winning. With time now such an important factor, we can't afford a cloudy crystal ball.

Technology

The technological advance, as everyone knows has been amazing. The planner's problem: we have drawn very heavily on the technological bank. Basic new scientific information input has not kept up with applied science efforts. In such things as high temperature metallurgy, high energy fuels, means of communication, the basic scientific knowledge is far short of what is needed. Even in the applied area of air cushion platforms, progress is slow because Army doesn't have all the basics.

To start filling the bank again, Army is investing not only in the U.S. but abroad, have been issuing research grants (rather than contracts) in the past year to give scientists a freer hand. And Army picks the best brain power they can find. For instance, at least a half dozen of the European scientists working under Army contract are former Nobel prize winners.

Another "bank" deposit: strong participation in several formal programs which have either primary or secondary feedbacks to R&D. Examples: The American-British-Canadian Army Standardization Program, a similar one within NATO, a tri-service development and production sharing program agreement with Canada. (Under which we buy from Canada what they are capable of producing, they use the funds to buy from us where they haven't the technical capability themselves. Canada, which invested $9-million last year to fill U.S. hardware development needs, hopes to get a production contract if successful. Another program: the mutual weapons development part of the Military Assistance Program in which we foster R&D work in allied countries to meet their own equipment requirements, pay up to 50% of the research costs.

The Money

Eventually, later if not sooner, solving these headaches gets around to finding the finances. And here, as much as anywhere else, Army R&D is in a bind. Said one general, "We know there are areas where we are hurting because we haven't the money to go into them."

In spite of the general acceptance of the new importance of R&D, Army's investment in the field is actually dropping off. R&D costs are going up (at a rate of 6% per year for primarily salaries and more modern equipment) and the boost is not being covered by the budget. Nor is it very practical to plan on the hope of large fund increases.

In addition, about 60% of the Army's R&D budget must go into missile systems which tends to harden flexibility. And stacked on top of this: the one year budget cycle. Although programs are planned more than a year in advance, Army is never sure, from year to year if they will get the money. The pattern: several approved programs have no money behind them. This hurts, particularly in fields other than missiles which means most of the modernization programs and the basic research area. Said one officer, "You only waste resources when you turn a quest for new knowledge on and off like a water faucet."

The Budget

Each year Army works up about four separate programs for the budget, starting with an "optimum program plan," which is "reasonably well-rounded based on what we think we can reasonably expect in the budget." Each succeeding program plan down to No. 4 is based on what Army will do if it gets a little bit less than what is "reasonable." Its performance so far: receiving just about enough money to finance No. 3 or the next to the lowest shopping list. At the same time the demands of the business are forcing Army to advance on a far broader front than ever before. "It used to be that we could rely on industry's technological base to start from. We have gone so far so fast in the past few years, that we now must establish the base ourselves. It even involves the development of whole new industries." The net effect: At precisely the time when Army needs more money, they are getting less.

So, to Army Director of R&D Richard S. Morse, the only practical answer is, "We must do a better management job if we are going to keep our head above water." It is growing more difficult.

One way Army hopes to get a start on better management is with the reorganization announced recently. Amounting to "a major step forward," it gives Trudeau the authority to transfer personnel, control facilities and programming for the R&D portion of the technical service effort. The basic document is now out, and Army is working on the implementation details.

But the team now has an incentive: an agreement with York that any money they save they can keep for other programs—an agreement Trudeau has relayed to each of the tech services.

Immediate effect on various Army R&D agencies varies. In the basic research field, the impact should be significant; increasing both the R&D control of funding and activities, eventually setting up a basic resource organization somewhat analogous to the Office of Naval Research—but not entirely. "We're not going to take this (basic research) out of the tech services and make what looks like a nice neat little package of it."

In the major hardware developments area, most tech services will be affected very little except, from OCRD's standpoint, there will be better reporting, better control of money and manpower. In summation, the reorganization gives the Chief of R&D the authority to go with his responsibilities.

One likely reward will be in manpower. Members of the scientific community, exposed to Army's R&D organization, have long recommended setting up stronger lines of authority. (Morse sat in on a study of this as long as eight years ago. The Army Scientific Advisory Panel has proposed the change regularly in recent times.)

Says Morse, "Our military technical officers are a very impressive pool of talent, but the civilian side of the shop has been relatively weak. Now that we've done what they all have been saying that we should do, we hope the scientific community will find a more attractive environment. This reorganization is a stepping stone, in one sense, to get the kind of people we need to carry out an improved effort."

Unmatched

The reluctance of scientific talent to work for Army has been, according to Trudeau's chief scientific advisor, Dr. Harold C. Weber, "partly the fault of the Army in failing to publicize its achievements effectively, but a lot of the problem has been in the scientific field itself." As a hangover from the 1920's and '30s when Army really didn't have the money to do anything, scientists have been classifying Army R&D as "second choice" even though that situation no longer holds.

Recognition of the change (the unmatched—anywhere equipment, programs, etc.) is coming slowly. One rea-

son: calling scientists into Washington to serve on Army R&D committees, see for themselves what improvements and advances are occurring.

In sum, Army's reorganization is a start toward solving the planning problem and the headaches that flow from it: money, technology, talent. On the way to full implementation, it is a major step in a wide variety of concerted OCRD efforts: the solid rarely publicized management decisions which result, usually, in a big improvement in the much publicized hardware.

Attitude

In the workaday world of the services, the attitude is probably something analagous to that of the Trojans when Troy fell—generally speaking, life would be easier if the gods would stick to their ambrosia and let the world run itself.

Unlike practically any other part of the Pentagon, the functional area of researeh and engineering has what appears to be a set of serious organizational problems—a more than healthy number of questions about exactly who is responsible for what, and where the lines of authority should be drawn.

Where the procurement section of the Defense Department can point to a set of firm policies established in the past year or so, the research and engineering faction—taken as a whole—tends to throw up its arms in something altogether like confusion.

While it may be simply that R&D managers in the Pentagon are more frank regarding their problems, any comprehensive series of interviews in that area of Defense management leads to a basically contradictory set of conclusions.

In any one given segment of the Defense Department—Army, Navy, Air Force or OSD—R&D is a well-controlled, clearly defined area of operations. But in trying to match any two of those segments, there seems to be a tendency towards cracks in the structure.

A certain amount of dissent in the R&D ranks of an organization as large as the Defense Department is inevitable, and fully desirable. This is true by the very nature of the job at hand.

Research and Development, by definition, works largely in the area of the unknown. For Defense to commit itself to only one course of action in any given area of research would be obviously unwise.

But the situation in Defense R&D appears to be one in which one service, for instance, freely admits that it does not know what another is doing in a given area, even though they may have a considerable program of their own in the same area.

It is an interesting comment on the organizational state-of-the-art in R&D to take a quick rundown on the number of would-be saviors that have appeared and disappeared on organization charts since the Russians launched their Sputnik in October, 1957.

Director of Guided Missiles, National Aeronautics and Space Agency, Advanced Research Projects Agency, Director of Defense Research and Engineering, Army Ballistic Missile Agency, are some of the many that have come along.

Significantly all—with the exception of DDRE—faded into the background of the research and development picture, without having accomplished much of anything on the plus side of the balance sheet.

And even looking at DDRE as the exception, there is the election year factor to be considered. For the election—regardless of outcome—must be taken in the light of a comment by one DDRE manager: "Dr. York has made this office in his own image, following a very energetic and zestful path of action. Another man might be inclined to handle the job differently, and different handling could change the job entirely."

At the service level, these machinations have been called "that topside turmoil," and the general consensus of opinion runs something like this: "What they do at that level really hasn't much to do with what goes on in our labs, but our job would certainly be easier if they left us alone."

On one hand, DDRE executive remarks that "the military has too many echelons and not enough scientific background. There seems to be a prevalent misconception that commanding a battle group or an aircraft carrier is enough to qualify a man to run a missile program."

And on the other hand, the military scientific manager says that "DDRE is too far away to manage our programs in detail, but they insist on trying. We've had them ask us for information so detailed that we didn't know where to find it, and hadn't seen a need for in the project anyway." DDRE flatly denies this.

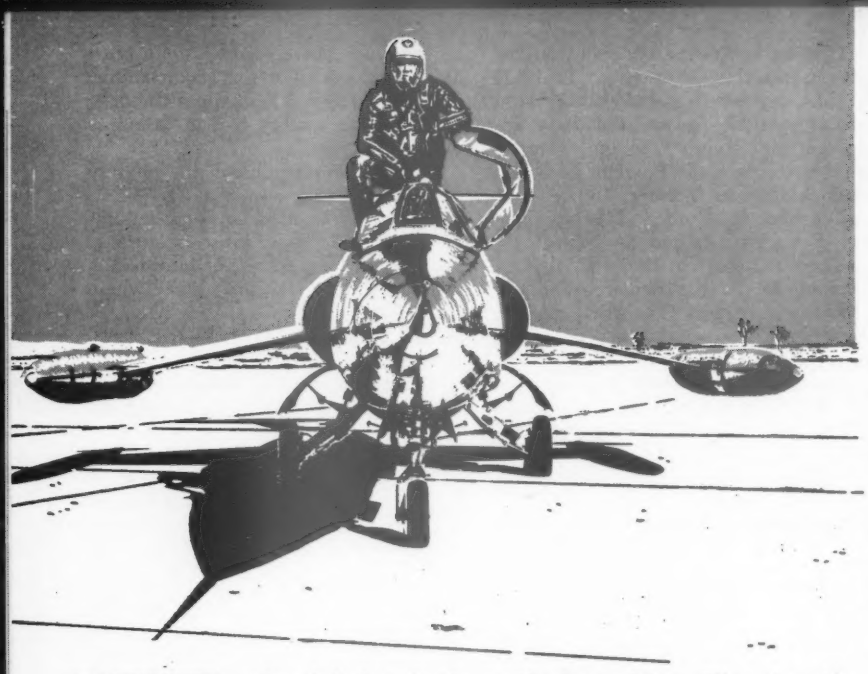
A large segment of the service outlook on the problem is summed up this way:

"Thousands of man-hours are spent by personnel in the Services and in higher levels of government personnel in the myriad reviews of our programs. We continuously give presentations to explain, justify and re-justify our programs, not only to people within our own organization, but to the many levels of government management above the Services.

"Once an R&D program has been approved by all echelons within the Service, including the Secretary himself, the program is then reviewed by the Office of the Director of Defense Research and Engineering, the OSD Comptroller, the Bureau of the Budget, the President and his staff and by Congress.

"At each level, people must be indoctrinated and program must be explained and rejustified. After final program approval is obtained for a particular fiscal year the whole process of review and justification must be repeated for all levels of management during the apportionment process.

NEW WEAPON—*An Italian-developed 105mm pack howitzer under evaluation by the Marine Corps. A possible addition to the modern Defense forces.*



STARFIGHTER—*Acknowledged to be the world's fastest fighter. What after this: VTOL/STOL aircraft; man in space?*

"Also, any of the levels of review above the military departments in government can withhold or defer funds or stop programs at anytime. No justification is ever required for such actions.

"People above the Services in the review chain can all say 'no' to a program but will not assume responsibility for the results of such actions.

"Few people question the need for a close review of Service programs at a level above the departments. Duplicative programs must be eliminated, our defense budget must be kept within reasonable bounds, and our national military posture must be the optimum in the changing world political and economic picture.

"However, a consolidation of the review procedure at higher levels could save thousands of precious man-hours by top management personnel and reduce our lead time in developing weapons and equipment.

"The staff of the Director of Defense Research and Engineering has expanded rapidly in the last few years. Many competent technical and management personnel have been added to the DDRE organization.

"Most of the technical people have been associated in former jobs with a particular field of science or development and, logically, are most interested in this particular phase of the programs of the Services. This situation immediately leads to serious problems.

"For example, we find that some of our programs which happen to lie in the particular field of interest of some of the DDRE personnel are scrutinized in minute detail while others, equally important, are not questioned in the review process.

"Or, on the other hand, DDRE personnel sometimes attempt to get into the fine technical details of a project, and run the project from DDRE level. Again, such incidents usually result from previous experience by the person in the particular field.

"Another problem which is evident in our relations with DDRE comes about as follows:

"In review of a particular program, DDRE personnel sometimes call in contractor representatives in order to obtain 'independent' information concerning the project. In these discussions, contractor representatives discuss not only technical details but contractual and funding problems as well.

"The possibility then exists that DDRE may then prescribe the level of funding for the project based on these discussions with the contractor, and without knowledge of the total program and funding problems of the service in question."

Such details must be left to the individual military departments if coordinated, well-balanced programs are to result.

If the foregoing smacks of the heretical, it is probably worth pointing out a fairly obvious fact: the business of research and development is research and development. The managers that exist in this particular area of defense operations perhaps manage best when they manage least.

In many ways, the job is to give the scientist and the engineer a climate in which he can work uninterrupted by problems that have nothing to do with his basic job—advancing the state-of-the-art.

It is perhaps for this reason that there will never be a fully effective "savior" for the Defense research and development management problem.

The program is simply too big, and too closely tied to specific service requirements to be managed effectively in this way.

While there have been cases in which top level management has been obviously needed and lacking, top-level management is not a solution to such problems as nose-cone re-entry, or submarine detection.

These are problems that must be solved in the laboratories of the services who work with the problems. And at best, the so-called top-level manager is at least two or three echelons away.

On the other side of the coin, there is a strong case for the sort of work that is done by DDRE.

Summed up, it runs something like this: "There is nothing that would make our job easier, and nothing that we would rather do than leave the entire research and development job to the services. This, in point of fact, is exactly what we try to do.

"But we feel that there are many areas in which the services have abdicated their responsibilities. It's a matter, as we see it, of finding the best way to do a job.

A Balance

"On the standing complaint of 'authority with no responsibility,' let's bear in mind that the services can not make this claim with any validity. It is our office—and not the services—that has to come up with a balanced DOD-wide program.

"The services complain about too many reviews, but have just as many within their own organizations. As a matter of fact, we bend over backwards to cut down on this sort of thing, using such techniques as concurrent reviews by one or more top level offices.

"It's not our business to get into the operational questions that the military has to deal with. That's their problem. But if Air Force asks for a hundred billion dollars to put a man on Mars, we feel it's our business to turn an objective scientific eye on the operational problem that Air Force actually has in mind and see if the same thing couldn't be accomplished from the moon.

"If we are charged with meddling on the technical level of service operations, it is only fair to point out that we only get into this when the services

run into trouble. Our people are very competent technically. Often a fresh approach can be a great deal of help in the kind of work we face. And of course, we need certain information to make our decisions a valid basis.

"As a general rule, we don't get down to Indian level. We work very closely with the Assistant Secretaries. We see pretty much eye to eye with them, and we always give them a chance to defend their own position if there is difference of opinion.

"At our level we have a fairly obvious negative control over what the services do. But it is not correct to say that this is all we exercise. On the positive side, there are three basic techniques at our disposal.

"First, although it smacks of the negative, we can let the services know what we won't say no to. Also, we can work through Advanced Research Projects Agency, and as a last resort use our emergency funds to initiate a program.

"Third, we can direct that the services go to work on a specific project, or move in to direct it ourselves. Understandably, we tend to run into foot-dragging with this method, so we are reluctant to use it."

Middle Ground

Somewhere between the two extremes, there is undoubtedly a middle ground that will provide overall direction for the service research and development programs, without interfering in the actual conduct of those programs needlessly.

One step towards the delineation: the recent conference of service and Defense research and engineering managers at Ft. Monroe, Va. Here, this problem was laid on the table, aired thoroughly. Among the high points: Dr. Herbert York staked out the DDRE position, explained exactly why things were done the way they were.

But until that middle ground is delineated, it is probably safe to say that there will be time wasted in DDRE, as well as the services. That technical and managerial man-hours should be wasted at all in this vital area of Defense operations is illogical—and that such time should be wasted over organizational disputes borders on the ridiculous.

On paper, perhaps a step in the right direction was taken over a year ago in setting up Assistants to DDRE covering functional rather than technical areas. Instead of Electronics, Aircraft or other technical areas, the new offices covered Strategic Weapons, Tactical Weapons and other broad areas of defense research and development.

Paradoxically, it is these offices that seem most guilty of over-emphasizing detail in carrying out their jobs. Again, until some working arrangement is found, time will be wasted.

Getting away from internal disputes, it is worth looking at some of the more positive programs that have been initiated by DDRE in the past year.

Among the significant ones: a central Defense Department office to set up reliability standards for military equipment; a centralization under DDRE of missile ranges and space ground support work; an organized program to find technical means to back up arms control and disarmament; and active work to find better ways of disseminating scientific information throughout the total defense research and development complex.

All of these tasks fall logically to the office of DDRE. In each case, the job is one that couldn't bear full fruit under the direction of any single service, and each is vital to the total Defense effort.

In the reliability area, Dr. York has named Rudolph Furrer as his special assistant to cover this phase of R&D problems. In a memo to the three Service Secretaries announcing the appointment, York left little doubt on the importance of the work:

"With the substantial increase in the complexity and cost of weapons, weapon systems, related materials and equipment being developed for defense applications, it has become clearly evident that increased attention must be given to the factors of reliability as they relate to the performance of these devices. . . . The active participation and cooperation of all agencies within your respective Services having an interest in, or who might benefit by, this important undertaking are most earnestly requested."

Reliability

A blunter statement of the problem is offered by Lt. Gen. Bernard Schriever, chief of the Air Research and Development Command: "If we don't have reliability in our military systems today, we haven't got anything."

A better means of disseminating technical information throughout the Defense Department is one need of today's research and development climate that virtually no one will argue with.

In an attempt to alleviate this particular problem, DDRE has set up an ad hoc group under Ben Huff to find out, first, what is needed to set up a better reporting system, and second, how such a system could be effectively implemented.

What this boils down to is setting up some sort of an interim system, then phasing into more advanced techniques, probably relying on automatic data processing.

For the present the most promising immediate system is to use what the services themselves are using—that is, DD Form 613. In working with the 1961 budget, DDRE has found this method of gathering information offered "improvements on the order of 100%."

In the future even better results are expected, and definitely will be needed to make the program deliver full potential.

Looking to ADP and the future, the aim would be to handle maximum data in the simplest, most flexible possible format. Armed Services Technical Information Agency has done some pioneering in this area, but nothing on the scale that would be needed by DOD.

Great Value

Besides providing feedback to the scientists who are actually working on R&D projects, such an information system would obviously be of great value to top managers in both DDRE and the services. By being able to run through all of the active projects in a given area, it would be extremely simple to spot any gaps in the total program, and, likewise, to spot any duplication of effort.

Again, this is a program which clearly couldn't be handled effectively by any one of the services, and therefore falls logically to the Director of Defense Research and Engineering.

From the services' point of view, this is the sort of program that can be most effectively handled by DDRE. It is one that does not interfere with actual laboratory work in the Services, and yet it is of considerable value to the overall Defense R&D effort.

More essentially, it is the sort of program that lends positive support to the work that the services are doing, without meddling in the nuts and bolts of the services' operations.

With most of the really big missile programs either completed or well on their way to completion, there is a strong possibility that during the year or so that the services will be finding a more relaxed atmosphere to work in —at least in terms of headlines.

With Atlas, Polaris, and a host of Army tactical missiles operational, and with Minuteman and Pershing well on their way to becoming operational, the "missile gap" problem becomes something for the procurement officers to worry about.

Most of the basic problems are licked in missile works: The re-entry and guidance problems, for instance,

Tri-Service Advancement . . .

on Atlas and Minuteman are basically the same. Most of what is needed in missiles in the near future falls in the category of product improvement, or more-of-the-same in terms of power.

This should mean that greater amounts of military research funds will be spent in such areas as anti-submarine warfare, electronics or chemical-biological-radiological warfare during the next few years. Many of the areas of military R&D that have seemed to be somewhat neglected should find themselves in line for a bit more money.

Where in the past the major problem has been one of simply getting a satellite in orbit, or going operational with a given missile, the situation for the future seems to be slightly altered.

More sophisticated satellites, greater reliability, more exhaustive utilization of the hardware on hand would seem to be the order of the day. Even the man-in-space program will be able to work largely with on-hand hardware.

One result of this will be a return to greater emphasis on manned aircraft. With re-instatement of the B-70 in the Air Force, and the heavy stress being placed on Eagle/Missileer in the Navy, the priority relationship between aircraft and missiles should tend to shift to some degree.

Aircraft nuclear propulsion, VTOL/STOL aircraft, and the number of other programs stand to be stepped up.

Taking the B-70 as an offensive system—as opposed to the cancelled F-108 defense Interceptor—Air Force has already pried loose some dollars that have been withheld, will probably increase their efforts to move the program faster.

The Campaigns

With an eye to advancing the state-of-the-art in aerodynamics and providing greater flexibility to the U.S. deterrent force, Air Force has spent much of its time in the past few months running a concentrated campaign to get the B-70 back on its feet.

Navy's Eagle/Missileer combination of weapon systems is probably one of the most significant programs Navy has undertaken since the Polaris missile/-submarine marriage. The reason, in one word: flexibility.

Proponents of the program in the Navy see the E/M pairing as being a total weapon system that can be used for just about anything from fleet defense to bombardment of enemy shore installations.

Basically, the program consists of a high performance missile, coupled with a relatively slow aircraft. To put Eagle/Missileer on the Navy's carriers, what is needed most is an engine for the aircraft—many of the fire control, navigation and missile problems are ones that have already been solved.

But what Navy is looking for is an entirely new turbofan power plant.

While there are existing turbofan engines, none of them are close enough to the size that Navy wants to be adapted for the job: The latest version of the B-52 uses turbofan, but it is much too large. Another already developed engine of this kind musters only about 10,000 lbs. thrust. Navy is shopping in a much higher range.

The turbofan will provide the Eagle/Missileer with a fairly good rate of speed and a high amount of endurance. The endurance factor Navy wants is something on the order of several hours on station, at a considerable distance from the fleet. Compared with pure jet aircraft, the turbofan engine operates at about half the cost at low altitudes.

In another phase of the aircraft field, it appears that VTOL/STOL has been given enough of a boost to get it moving.

An Example

An outstanding example of the sort of situation in which nobody was sure what anybody else was doing, VTOL development has, in the past, had a fairly rocky existence.

So much so that DDRE stepped in this summer to try and give some direction to what was obviously an uncoordinated effort. One other reason: Defense felt that work that should have been done in this area was being overshadowed by higher priority missile and space work in the services.

The actual move was made following recommendations made by Assistant Secretary of the Air Force C. D. Perkins, as the head of an *ad hoc* group to study the VTOL problem.

Since all three services have a need for such an aircraft, and since none semed to be able to do the job alone, the joint approach appeared logical.

In response to the DDRE move, the top R&D executives in the services have moved on their own to get together on the problem. Courtland Perkins in the Air Force, Navy's Assistant Secretary for R&D James Wakelin, and Dr. Richard Morse in the Army are working together to put wheels under a VTOL prototype.

If successful, this would be one of the first instances in which the three services have gotten together on a common hardware development problem and come up with anything as major as a completed weapon system prototype.

In a different, and rapidly growing, area of Defense Research and Development work, there is also promise of heavier emphasis in the future. That area is electronics.

A measure of what's involved: by DDRE estimate, Defense spends about $8-billion—20% of its research and development money—in electronics, uses over 80% of the scientific and engineering talent available in this area throughout the nation.

Importance

Among the more significant areas in the electronics field, as far as Defense is concerned are, on the one hand reliability, and secondly, frequency compatability.

The second of these areas—frequency compatability—is perhaps of more obvious importance to the actual military operating forces. The basic question under study: what, in the way of electronic interference and electro-magnetic radiation, with the weapon systems of the future have to contend with?

Under present technology, there is a chance that the weapon systems of the not-too-distant-future could "annihilate each other with mutual interference." In this program DDRE is working closely with the Joint Chiefs of Staff—in fact have a joint planning operation set up with J-6. The services are providing guidance for the program.

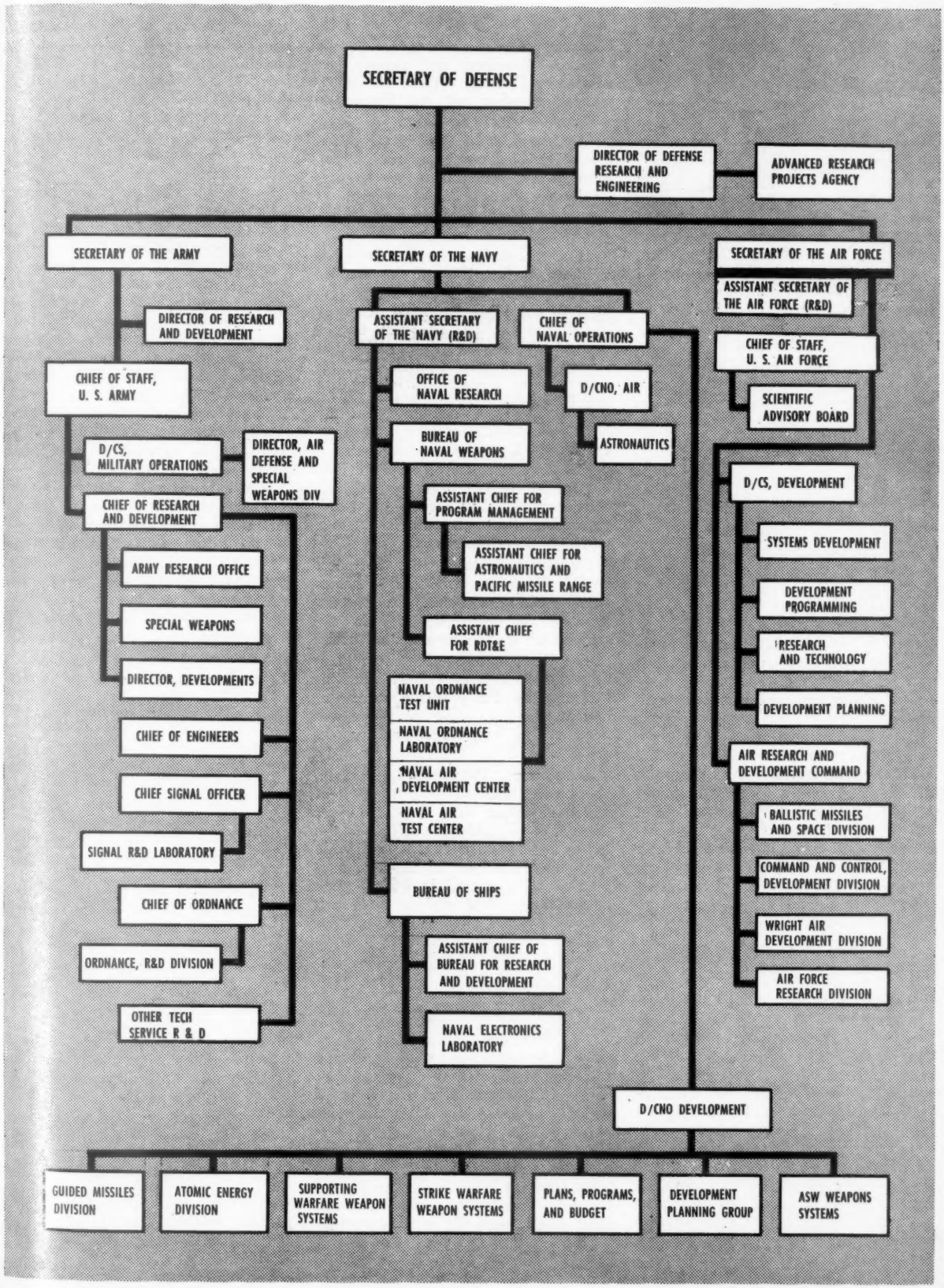
In the wild blue yonder category, there is full realization in the office of the Director for Electronics in DDRE that the ICBM can never be the so-called "ultimate weapon."

As a result, this office is spending a good part of its time working to find new ideas that could be of value in the future. Points out Director of Electronics J. M. Bridges, "It is easy to see that there is going to be a missile stalemate in the fairly near future, and no new generation of ballistic missile as such is going to make much difference. As a result we are looking into such areas as cheaper production, or some kind of a break on the logistics requirements of missiles."

One line of approach to this problem arises out of the first few years of the space age, and how they were handled.

To get hardware in orbit in a hurry, Defense used much in the way of existing hardware for its missiles guidance package and satellite payloads.

Highlights of the Organization . . .



The Year Was Active . . .

And while this worked well in the first months of the space age, the need now is for greater reliability—what Bridges calls "usefulness." "We have been lucky on this point so far, but with a system as sophisticated as Midas, this kind of thing begins to show."

From an organizational standpoint, the past year has been a fairly active one in the area of research and development. Army has moved to strengthen their overall R&D system, and both Air Force and Navy spent a good part of their time trying to shake down brand new organizations.

In Army and Navy the move has been to more centralized overall control of Research and Development work, and in Air Force, towards greater decentralization. In both cases, the aim is to get authority and responsibility in the same place.

Navy's year has been by and large reaction to changes that have taken place in the past.

It was just about a year ago at this time that the merger of Bureau of Ordnance and Bureau of Aeronautics, along with the establishment of an Assistant Secretary for R&D and a Deputy Chief of Naval Operations for Development took place.

And while this would appear to be a rather top-heavy arrangement, it is worth pointing out that Navy is one of the staunchest believers in a generally de-centralized form of doing business in this area.

Through the two top-level R&D posts, and Bureau of Naval Weapons, Navy will be able to provide better overall direction to its R&D work. But it is under this umbrella that the operating scientists and engineers must work. (For a complete rundown on what Navy has done in this area, see August and September ARMED FORCES MANAGEMENT.)

Extensive Change

Most extensive set of changes in the past year has emanated from the Air Force, with the organizational shake-up running from the staff of the Deputy Chief of the Air Staff for Development right on down into the field.

First move, last winter, was to overhaul Air Force Research and Development Command, drawing sharp lines between the staff and the line functions within the command. Hit hardest by the missile development race, Air Force had in effect let its organization get out of hand, needed to bring it back into a workable set of relationships.

The result was the setting up of four operating agencies—Ballistic Missile Division, Command and Control Development Division, Wright Air Development Division and Air Force Research Division.

(Command and Control Development Division, at Hanscomb Field, Mass., works primarily in the electronics division, faces at the operating level many of the problems described above at DDRE level.)

More recent, however, has been the overhaul of the office of the Deputy Chief of Staff for Development, Lt. Gen. R. C. Wilson. Spurred primarily by Wilson himself, the aim of the change was to get rid of an entire cluster of assistants to the DCS, recast them as Directorates where they could function more efficiently.

Back to Stever

Four directorates have resulted: Development Planning, Development Programming, Research and Technology and Systems Development.

Harking back to the Stever Report on Air Force research and development, the aim was simply to put authorities and responsibilities in the same place on the organization chart.

The Director of Development Planning does just about exactly what his title implies: the job is a matter of looking ahead to what Air Force will need in the way of future weapon systems.

Development Programming is, again, about what it sounds like: a matter of matching dollars with ideas. However there is one significant addition to the duties in this office. That is to provide work needed to set up effective support of Air Force R&D work. Range construction, transportation and such matters also fall to this office for their staffing.

The Research and Technology Directorate handles Air Force Staff work on whatever is needed in the way of basic and applied research.

The Directorate of Systems Development will work most closely with the majority of the operating agencies of ARDC. Corresponding closely with the ARDC alignment, the Directorate includes a Command and Control Systems Division, an Aeronautical Systems Division and a Development Operations Division. This is the segment of the new organization which will work most closely with the weapon systems managers at ARDC level. Also it will serve as the point of contact for missile range management, working closely with DDRE's newly-formed range director, Lt. Gen. Donald Yates.

The fourth Defense Department operating agency in the Research and Development area is the Advanced Research Projects Agency. If ARPA has failed to get itself reorganized during the past year, it has nonetheless changed its approach to many of its responsibilities, and has settled down to what looks like an enduring mode of operations.

Comments Assistant ARPA Director L. P. Gise, "We aren't bending tin anymore, and we are pretty much out of the space business. It was a very romantic business, but the tempo has slowed down, and we can concentrate now on truly advanced research.

"In the future, we feel we should remain fairly small. We presently are working with about half a dozen paper studies, and we have some top-notch technical talent from both within and outside the government. We have eased out of the space business, and we're finding answers to some really perplexing problems. DDRE needs an ARPA-like organization, no matter what he calls it."

Taken individually, each of the segments of the Department of Defense is apparently making considerable headway in its own area. But whether this is something that can be summed up into a cohesive, unified effort is at least debatable.

The Trend

The existing penchant for re-organizing the nation along to scientific superiority is one that fairly obviously doesn't work, and one that is probably more of a hindrance than a help.

It is significant that the services—who must eventually take care of the actual R&D work—are tending to decentralize their organizations in this area.

That there is need for top-level, central direction of the nation's defense R&D effort is indisputable. That there are problems—such as reliability and information dissemination—that can only be handled on a central basis is equally clear.

On the other hand, there has been too much of a tendency to pile superstructure upon superstructure, giving everybody in the higher echelons the option of refusal, and little positive responsibility.

But for the present, these would seem to be the two extremes that Defense has not been able to resolve. For the full impact of Defense R&D to be felt in the nation's arsenal, there must be some resolution of this problem.

For just as surely as effort can be wasted by over-management, effort can be wasted by lack of central control. ■

Turning Policy Into Practice

What's Ahead In Procurement

PROBABLY NO AREA of military operations works under a more voluminous accumulation of policy than that of procurement.

It is also probably true to say that there is no area of military operations more closely watched by almost innumerable critics, or more frequently brought under the guns of these critics.

From full-blown Congressional investigations, to scathing General Accounting Office reports, to an occasional Congressman who simply takes it into his head to put on a one-man show—the salvos lobbed over on this area of Pentagon business seem to be without end.

Bad contracting—influence peddling—discrimination against small business—under-the-table negotiations—the list of charges verges on infinity. But in spite of the regularity with which these irresponsible charges are proved false, they recur year after year.

How this situation has developed, what is being done about it, and how more of the same can be prevented are often overlooked.

Secondarily, the latter two of the above areas—what's being done, and what else will be done—are major areas of operation in military procurement management.

The primary job, from which the above inevitably follows, is to insure that the military operating commander has what he needs to do his job, at the least possible cost to the taxpayer.

While work done in this area is by and large unglamorous, it is among the most significant and basic areas of military management. If progress in this area has appeared slow, it is only because of the tremendously complex nature of the job, and the almost unbelievable range of requirements ($25-billion worth yearly) the military procurement system must fulfill.

Buying products that include nearly everything from potatoes to Polaris submarines, the military procurement offices works in all phases of buying from haggling in a Chicago street market to trying to find the most effective way to buy a missile which, at the start, is not much more than a seemingly sound idea.

To get a job of this size and complexity done calls for a fairly large slice of the military personnel pie. More important, it requires a competent organization, and one adaptable to change. One in fact that is constantly looking for change that could improve its methods of business.

Top of the organizational heap is the Armed Services Procurement Regulation Committee, monitored by C. C. Bannerman, the Director for Procurement Policy under the Assistant Secretary of Defense for Supply and Logistics.

Says Bannerman of his job, "we're never through." At the present time the Committee (with representatives from each service) usually meets all day two days a week, has itself broken into some 60 subcommittees, handling currently some 50 pending cases affecting ASPR.

The sheer volume of work—in terms of cases pending—seems a fair measure of the effort that Defense exerts to clean up its so-called procurement problems.

Comments Bannerman, "We don't concede for a minute that we've done a bad job. But as is true in any operation, we can always stand a little tightening up. Actually, we feel that our policies are in pretty good shape. In the future we will probably spend more time learning to work well with them."

During the past year, one of the major areas of progress was in contract pricing. To quote Bannerman again:

"We have greatly sharpened our regulations on control of contractor costs—how we negotiate, and how we review our costs estimates. In many

One of the biggest single causes of procurement problems has been the advent of the missile.

ways, we are doing a better job than industry. Our prime contractors, for instance, are coming to us to learn the best way of dealing with their subs."

It is almost unfair to cite only one example of the work that has been done on keeping ASPR up to date. Actually this is part of a twelve year program of refinement on the great document that governs Defense buying.

(One measure of the continuing nature of the job: Army has moved its ASPR Committee representative in to the office of the Assistant Secretary of the Army, and made it a civilian position to maintain continuity.)

Frequently the function of ASPR is to lay down defense procurement policy and procedure, it is a matter of shifting emphasis to areas that need it, and plugging loopholes discovered in day-to-day Defense buying.

Many changes finally read into ASPR are ones that generate in the field, by service procurement officers as they carry out their jobs. Thus, changes in ASPR tend to be reflections of existing practices.

Two examples of this lie in the recent incorporation of two-step advertising procedures and a value engineering clause for contracts in ASPR. First of these is a technique developed by Air Force for introducing a greater degree of price competition into extremely complex buying situations.

Value Engineering was developed by Navy to cut non-essential and often costly frills off hardware that they buy.

Both of these techniques were in operation before they were incorporated in Armed Service Procurement Regulations.

Within the services themselves, where actual buying is handled, there are enough basic differences in what is bought so any change in management technique or organization can usually be explained in terms of these differences.

At the two ends of the spectrum lie Army and Air Force, with Navy somewhere in the middle.

Air Force, only about 13 years old, was set up (from a procurement standpoint) to rely fairly heavily on Army (mostly) and Navy for many of its supplies, such as subsistence, clothing and medical supplies.

Because of this, its procurement system has been geared to that equipment which tends to be unique to Air Force. Because of the Air Force job, this has meant that it has had to buy fewer, more expensive weapons than has been generally true for the other services.

At the other extreme, Army has been generally able to work within its traditional buying structure without having to go to such arrangements as the AF Weapon System Project Offices.

Navy deals in something of a mix between the two extremes. It must buy Polaris on the one hand, and more traditional hardware, such as industrial supplies on the other.

As a point of comparison, Army can say "our procurement offices are set up about the same way they were five years ago," while Navy points to the merger of Bureau of Aeronautics with Bureau of Ordnance as having been dictated by the increased technical demands of its fleet.

These differences show up in other ways: Army is consistently at the head of the class in the amount of advertised bidding it does, as well as with the amount of money it is able to spend with small businesses.

But, as Army points out, this is simply because "much of our procurement money is spent on items that we *know* and items that we've had enough experience in so that we can advertise."

In contrast is the comment of one Navy procurement officer: "No matter how you look at it, there's no realistic way of advertising for a Polaris."

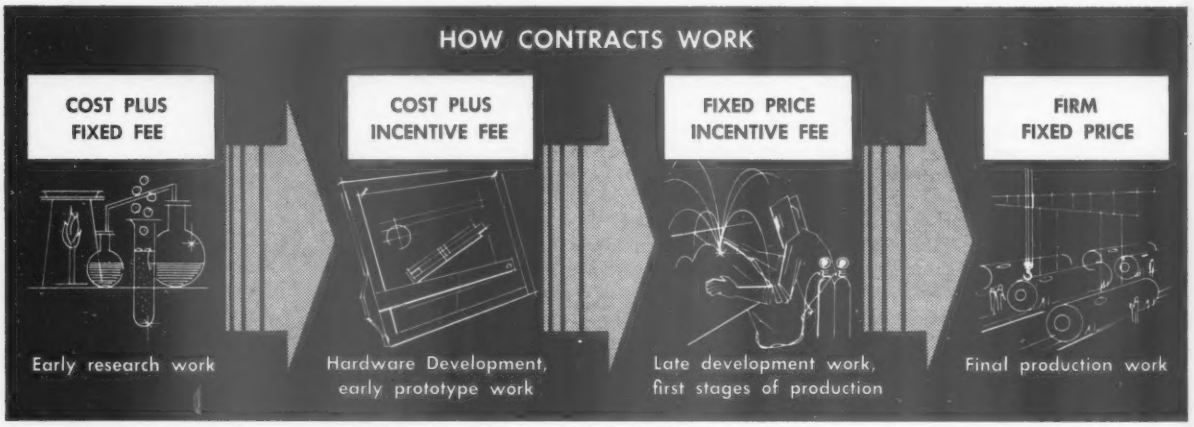
Given these basic differences, it is worth looking at specific measures each service has taken during the past year to make itself more responsive to the fighting forces it serves.

While Army's procurement offices have remained "about the same for the past five years," the same is not true for the rest of the Army procurement operation.

While there haven't been spectacular changes, Army has spent much of the past year simply tightening up its procurement operations—a process of smoothing down the rough edges.

In the small business area, for instance, Army has given contracting officers authority to make their own small business set-aside determinations.

In other areas, Army intends to work more with pre-bidders conferences on its more complicated buys.


HOW CONTRACTS WORK
COST PLUS FIXED FEE
COST PLUS INCENTIVE FEE
FIXED PRICE INCENTIVE FEE
FIRM FIXED PRICE
Early research work
Hardware Development, early prototype work
Late development work, first stages of production
Final production work

Also in the more complex procurement areas, Army is looking for better ways of determining costs and requirements.

What is wanted: some means of "very scientific evaluation" which will, preferably, maintain a high degree of bidder anonymity. One possible answer would be the Air Force-developed two-step bidding technique, called "a technique that we will see more of" by one Army officer.

In Navy, the two major changes have been in different directions, although equally significant.

The most important change in Navy's way of doing its procurement business has been institution of a program of pre-negotiation clearance for Navy's contracting officers.

Basically, the system works this way: In any Navy procurement over $300,000, a carefully run system of negotiation clearance is brought to bear, with an aim for "putting the best tools the Navy has in the hands of the negotiator."

Centering in a contract clearance branch of Office of Naval Material,

the system first provides for clearance on the authority to negotiate. With this clearance, the negotiating office goes ahead to set up the negotiations.

At the same time, they outline a "plan of attack" for negotiations and when their bids are in on the given project, they submit the plan of attack to the Contract Clearance branch in ONM. With this done, the negotiator is often able to draw on the experience of other contracting officers who have faced his own particular situation or one similar to it.

Obviously, the aim is, in one officer's words "to give the negotiators a chance to cross-fertilize ideas. When you are working in a highly specialized area, as most of these people are, there can too often be a tendency to in-bred thinking."

Also in the Navy, Bureau of Weapons is working on a campaign of "planned procurement." If this is successful it should do much to provide a smoother, more effective system of overall equipment buying.

Understandably, the program has the full support of VAdm. G. F. Beardsley, Chief of Naval Material, and—significantly—former Comptroller of the Navy.

What "planned procurement" attempts to cure is the ancient headache of having to spend all the money that's left during the last twenty minutes before midnight on June 30—the end of the fiscal year.

By leveling out the peaks and valleys in spending over the year, and by keeping the workload relatively stable, BuWeps hopes to be able to do a better all around job of buying.

Setting the system up is not an easy job, but the results that stand to be gained would seem to make it worth the trouble.

To Make it Work

To make the system work, BuWeps managers must have a fairly good idea of the problems they will hit in a given procurement, as well as all of the time factors, installation problems and competition climates they will face.

But by planning and preparing procurement actions ahead of the time when procurement funds are available, Navy has been able to place many new contracts in the first two months of fiscal 1961, and will probably be in much better shape by the end of the year than has been true in the past.

As a footnote to Navy's recognition of its own procurement needs, and efforts to meet them, the top level organization of the Bureau of Weapons offers a fair indication of the growing importance of the entire contracting and procurement picture.

In setting up the new Bureau, Navy wrote the job description for the Chief of Contracting to require a Rear Admiral. Going one step further, the Chief of Contracts ranks with other major divisions in the bureau—along with RDT&E, Production and Quality Control, Fleet Readiness, and Field Support.

The nature of the weapons that Air Force has to buy in itself is probably the best indication of the complexity of the procurement picture that can be expected.

With its procurement operation centering at Air Materiel Command Headquarters in Dayton, Ohio, Air Force unquestionably spends the most money for the fewest, most complex and most expensive weapon systems in the entire military arsenal.

Relying on Industry

Relying heavily on industry for most of its technical development and production work, Air Force is forced into having to rely heavily on its contracting/procurement work—perhaps more so than either of the other services.

In any realistic analysis of Air Force procurement, there must be two basic considerations.

First, Air Force is a new service, one set up by and large to depend on Army and Navy for many of its needs.

Second, and more to the point, almost as soon as it was set up, Air Force found itself working in technical areas, and procurement complexities with absolutely no parallel in past experience.

Dating from 1947—when AF became a separate service—there have been two major revolutions in the type of force that AF has been dealing with. The first—and easiest—transition was to jet aircraft.

But more violent as a departure was the change over to the missile force that forms so much of the strategic deterrent in the nation today. The similarity of these two areas stems from the fact that Air Force couldn't in either case go to the other services without overloading their systems. Nor did they have the in-house capability to do the work that had to be done themselves.

As a result, Air Force was driven into the arms of industry for many of the answers to its technical and production problems. This meant that new techniques had to be devised, and that a contracting and procurement organization in many ways different from its predecessors had to be put together.

Air Force put itself in the position of leaving to industry many of the management functions that had traditionally been the job of the services.

Being a new service, and one which had to use new techniques, Air Force has in many ways provided the most interesting subject for study in its methods of doing business with industry.

Publicity notwithstanding, many of the ideas in weapons development used by all three services for highly complex procurement matters are ones originally associated with the Air Force.

The Weapons System Concept, concurrent development, two-step advertising, cradle-to-the-grave management—not necessarily new, and not necessarily fully polished techniques, but nonetheless pointing the way to many accepted practices in modern military procurement.

In fairness, it is worth pointing out that Air Force adoption of many of these techniques was something akin to a shotgun wedding.

In being faced with new areas of doing business sooner than the other services, Air Force was simply pushed into finding how the jobs could be done.

It is also worth mentioning that Air Force has probably succeeded in running the most criticized procurement operation in the Pentagon during the past few years.

The Goal

Some of this has been unquestionably justified, but much of it has been simply lack of understanding of what Air Force was doing or trying to do.

Partly in answer to criticisms, and partly in shaking down its own organization, Air Force has come up with several new techniques and management approaches for its procurement during the past year.

From an organization standpoint, perhaps the most significant has been realignment of the contracting management set up in AF into three geographical regions, with an eye to concentrated skills, reduced costs and more flexible operations.

Under the new system, production, quality control, and other staff functions will be autonomous functions at each of the three locations. Effective 1 July, the new arrangement seems to promise considerable benefits to this area of AF management.

More generally, AMC Commander Gen. E. S. Anderson recently told the House Armed Service Committee that "this 18-month period (since Jan. 1959) represents the most concentrated management-oriented effort ever made toward the solution of major procurement and production problems."

Among the specifics: an Air Force industry symposium begun in January this year to provide "a two-way exchange of information and the supportive actions that will assure industry adherence to Air Force requirements under the most efficient management techniques and procedures."

The six areas covered in the meetings were (1) Make-or-Buy Policy, (2) Subcontract Documentation, (3) Selection of Source, (4) Acceptable Pricing, (5) Auditing and (6) Surveillance of Prime's Subcontract Actions by Air Force.

Further, Anderson points out that the Air Force is "constantly challenging industry to improve their negotiations, both with us and with their suppliers. In an instance of good results, Anderson cited "one company that has established an internal audit system to determine that new policies, Air Force instigated have, in fact, been carried."

Active Search

From an internal standpoint, Air Force has been no less active in its search for better ways of handling its procurement.

The three general areas of activity are directed towards (1) subcontract and purchasing; (2) pricing principles and management and (3) organizational realignment.

In the first of these, Air Force is taking a close look at its purchase survey program and techniques, bearing in mind that 50% of the money Air Force spends with its prime contractors is passed on to subcontractors.

Aim of the study: criteria to set up best possible scope and depth for purchasing system surveys.

With an eye to more effective pricing, Air Force is taking a much closer look at contractor overhead costs, and, Anderson says, "we have manifested positive interest in the establishment of cost reduction programs by the contractor. We have endorsed and advocated value analysis and similar cost reduction techniques."

(Value analysis is originally a Navy-sponsored technique. What it adds up to: a long hard look at a piece of hardware to make sure that nothing can be done as effectively for less cost.)

Anderson also says Air Force is looking for "significant savings . . . on a long range basis" under a recently set up program to provide competition in procurement of spares on its weapon systems. In the past, the initial supplier of a weapon system often kept all of the spares work in his own shop, based more on tradition than the best price to the Air Force.

In the organizational picture, besides the change in the contracting office arrangement, AMC has moved to separate its staff and executive people from the actual buying elements of the command.

Summing up his presentation to the Armed Services Committee, Anderson stated what is perhaps the best short analysis of the procurement situation in all three services:

"Despite all of these positive actions, mistakes will continue to be made. The actions will not obviate various types of reports which uncover exception areas. We can and will, however, continue to work diligently toward reducing these areas to the absolute minimum."

There is probably no tool more basic to the general field of procurement than the contract.

And like procurement itself, contract types and their use have come in for a considerable share of the criticism aimed in the direction of the Pentagon.

There is much truth in the comments of one procurement officer on this point: "With the exception of the cost-plus-percentage-of-cost contract—which is illegal—there is probably no such thing as a bad contract type—just poorly administered contracts."

The truth of the matter is that a contract—like any tool—must be used carefully and properly to achieve its full effectiveness.

Contract Types

Basically, the contracts that Defense works with are the following:

Firm Fixed-Price—as the name implies, this contract provides a flat price for a set piece of performance, in terms of hardware. There is no allowance for either good or bad performance on the contractor's part, and it is the easiest of all contracts to administer.

In using this kind of contract, the purchaser must obviously know precisely what he wants to buy, and just as precisely how much it should cost.

Fixed-Price with Escalation—a variation of the firm fixed-price contract, which allows for certain specific contingencies, such as increased labor costs.

Fixed-Price-Providing for Redetermination of Price—used when there is inadequate knowledge of probable cost at the outset. This contract sets a fixed price, and then allows for negotiation of final price after enough work has been done to provide cost information needed to satisfy both parties on final terms.

This contract type is also used as a protective measure for the buyer when wholly adequate competition doesn't exist.

Fixed-Price Incentive Contract—aims to provide the contractor with a reason—in terms of hard cash—to cut production costs. A fixed price is set, and allowance is made for a return (usually 10-20%) of any savings to the contractor, with remaining savings going to the government.

Because it is theoretically possible for a contractor to deliberately overestimate his costs in any of the fixed price contracts, the government must necessarily have a pretty firm idea of what it is buying, and how much it should cost to produce. This, of course is true of any of the fixed price contracts.

For this reason, the contracting officer who uses this kind of contract must justify its use in writing, demonstrating either where the government will save money by using the contract, or why no other kind of contract could be used.

In all of the so-called fixed price contracts, the profit for the contractor is a built-in factor—a part of the fixed price that is negotiated at the start. And in all of them, profits go up as costs go down.

Differences

To draw a rather thin line, this is one difference between the fixed-price and the cost type contract. Where the former is a total package as it is negotiated, the latter—the cost contract—treats the cost of doing the job and the contractor's profit on a more separate basis.

Putting it differently—and oversimplifying the case—the fixed-price contract is preceded by a statement something like this: "We in the Defense Department want X number of gizmos at Y dollars each. This adds up to a total package of Z dollars, total, which includes a 4% profit."

On the other hand, the statement preceding a cost-type contract would tend to run more like this: "We want X gizmos, but do don't know what it costs to build them, and since no one has ever built one before, we can't set a firm price on production. So you go ahead and build them, and we'll guarantee your costs. Your profit will be a flat Q dollars regardless of costs."

Once again, this is greatly oversimplified, but the main point is there.

Only when there is reasonably complete knowledge of what is to be bought can a fixed-price contract be effectively used. In today's rapidly advancing technological climate, with hardware becoming more and more complex, it is literally the exception when the Defense contracting officer—

Progress Report: A Better Break for Small Business

Much study and effort of previous years was brought to fruition during Fiscal Year 1960 as substantial advances were made in the small business program.

In the field of subcontracting, the previously voluntary program was made mandatory and its coverage extended to major subcontractors.

Other important actions strengthening the subcontracting program include:

1. Favorable consideration in the amount of profit or fee for unusual assistance and opportunities provided to small business concerns.

2. Closer scrutiny by contracting officers of prime contractors' "make or buy" decisions resulting in more protection to efficient small business subcontractors.

3. Review and approval by contracting officers of individual subcontracts and the general pattern of subcontracting practices of prime contractors.

4. Provisions that prime contractors receiving progress payments must agree to provide progress payments to small business subcontractors.

Publication of proposed procurements in the daily Department of Commerce "Synopsis of U.S. Government Proposed Procurements Sales and Awards" was increased (effective July 1, 1960) by about $3.6 billion, in order to facilitate and broaden competition for Defense procurements.

Each of the Military Departments is mechanizing one of its major Research and Development source lists: Army Signal Corps, Navy Bureau of Weapons, and Air Force Air Research and Development Command all hoping to find improvements.

When operational a few months from now, this mechanization will greatly facilitate the presentation by R&D companies of their capabilities and the thoroughness with which procurement elements can review the capabilities of qualified R&D companies regardless of size.

In other fields steady progress is being made. The scope of setaside coverage is being broadened by inclusion of construction procurements. Army Instructions, on unilateral setasides, issued 4 August 1960 to all field purchasing offices represents the most advanced step yet to be taken by the Army in the setaside field.

These instructions insure small business of continued and increased participation in Army procurement. The extensive programs for microfilming plans and mounting them on automatic data processing cards for increased availability are going forward at good speed.

Through machine tabulations, use of more pointed information furnished by the recently-revised Individual Procurement Report form, and fuller advance publicity, intensive efforts are under way to explore every possibility of opening sole source procurements to small business competition.

Many problems to small business are created by the imperative needs for major complex weapons, but the Department of Defense is helping small business overcome these problems to the fullest extent that it can do so compatibly with its primary missions.

or the contractor—knows what will go into fulfilling the demands of a major Defense purchase.

This means new techniques have been needed to meet the challenge. One of these techniques—and one which will continue to grow in importance—is the cost-type contract.

Cost Contract—simplest of all contracts in this category. Used primarily in research and development work with non-profit institutions, this contract simply provides that the contractor will be reimbursed for his allowable costs, as specified in the Armed Services Procurement Regulation.

Because of the limited amount of work that non-profit groups can handle, 3% of all contract dollars in fiscal 1959 were spent in this manner.

Cost Plus Fixed Fee—the contractor is reimbursed for allowable costs, and is given a fixed profit fee over and above these costs. Fee must legally be less than 15% of estimated cost in R&D contracts. In actual practice, defense seldom has to pay this much for a CPFF contract.

Again, this contract is used mostly in research, development or experimental work. In fiscal 1959, some 34.3% of procurement dollars were spent under this kind of contract.

Cost Plus Incentive Fee—the CPIF offers basically the same advantages as the CPFF, while providing an incentive for the contractor to cut costs. As with the fixed price incentive contract, the contractor usually gets in the neighborhood of 20% of the dollars saved.

Still Other Types

The foregoing are the most used contract types in today's procurement picture. While there are other types (Special Incentive, Time and Materials, Labor-Hour) they account for only a small part of the defense procurement dollar.

In deciding which contract type is the best for a given situation, the most important criterion is the amount of knowledge that the contracting agency has on the hardware to be produced. As this amount of knowledge varies, the kind of contract that will offer the government the best dollars-and-cents investment varies in direct proportion.

In this light, it is worth following through a hypothetical missile development program, using the major types of contracts (see chart).

If Air Force, for instance, decides it needs Strategic Missile X to fulfill its deterrent responsibility, and knows nothing about the technology involved, it is most likely to let its first research contract out on a cost-plus-fixed-fee format.

This allows the SMX contractor to work without having to worry about throwing good research money down the drain—he is assured of reimbursement for what he spends, and will pick up a profit fee for his efforts.

Air Force is getting the job it needs done for the cost of the actual work and a reasonable profit fee. Because state-of-the-art gave AF no indication of how much the SMX would cost, they were unable to set a specific price they could agree to pay.

But under the CPFF contract, they were not saddled with what could be an unrealistically high estimate—one that would cost them out of proportion with the actual work to be done.

After the first year's work on SMX, and as work moved to development, the contractor would begin to get a better idea of what would be required in the way of work on the project. As this information is passed along to the Air Force, AF would begin to have a much better idea of what a

realistic price for the SMX would be.

Thus, when the initial CPFF contract ran out, AF would have enough knowledge to move to a Cost Plus Incentive Fee Contract. This still carries a cost provision to allow for contractor problems or technical slowdowns, but also contains a feature which aims at cutting costs of the missile.

By setting a target—based on accrued knowledge—Air Force can tell its contractor "This is what the cost picture looks like to us. If you can beat this figure, it's worth 15% of what you save to us, and we'll turn that much of whatever you save back to you."

Conversely, the contractor stands to lose if he overruns target cost. If he can't meet the target he and the Air Force have settled on, it will come out of his profits.

Given, say, another year of work on SMX, with a greater bank of accrued knowhow, and perhaps a lowering of costs as a result of the incentive provisions in the CPIF contract, AF should be able to move on to another contract type—still more economical from the government standpoint.

Assuming that most of the development work is out of the way on SMX, both AF and the contractor have fairly detailed knowledge of the project in question. But on the chance that there are more corners to cut in SMX production, a fixed-price plus incentive contract would be signed.

The Rewards

This provides that the contractor will get a return on any costs he can shave in his production work, and that Air Force will also pick up their fair share of the savings. With the incentive profit included as a part of the contract, there is still an implied element of doubt on production costs.

By including the incentive factor, AF in effect says "We are almost positive on costs for SMX, and we've drawn this contract to reflect those costs and a reasonable profit for you, the contractor.

"But we are not so sure on the cost factor that we don't want to cover ourselves on the chance of something we overlooked. Because of this, we'll split anything else you can save. We are anxious for the savings ourselves, so you will get a portion of what costs you can cut."

The firm fixed price contract would be used only when SMX had become an off-the-shelf item, or something close to it. To use the fixed price contract, AF must know almost to the penny what the SMX costs to build, and eliminate all gray areas that could creep in.

The above is, of course, oversimplification. But the knowledge of the project covered under a given contract is the key factor in selecting the contract that will be used. Because from this knowledge comes the eventual price that is set.

The Complaint

As a footnote—and a measure of the importance of good contract pricing—there is one comment that should be made on recent criticism of the fixed-price-incentive-contract.

Critics have maintained that a contractor has only to inflate his cost estimate to walk off with a tidy incentive profit that he has never really earned.

Given accurate information in the first place, such inflation is impossible. No responsible military contracting officer would sign a fixed price incentive contract without such information.

Second, if pricing is bad, the 80/20 savings split that is a part of the incentive contract actually serves as a form of protection for the military.

On an inflated cost estimate in a fixed price contract, the contractor picks up the full dollar value of whatever he saves. Without the incentive split, this is true in any contract where such inflation occurs.

Another area where heavy criticism has been leveled at the Defense procurement operation is that of negotiation *vs.* advertised procurement. Again, the answer to the critics arises from a fairly obvious set of facts, for anyone who wants to take an honest look at them.

Basically, negotiated procurement is a product of the hardware that the military has to buy. While combat boots are combat boots, and can be haggled for accordingly, it is an entirely different matter to try to buy an air-launched ballistic missile.

Working with relatively simple material—such as clothing—the military can very simply write down its specifications and give its contract to the bidder who comes in with the lowest price while meeting those specifications.

But when nobody has the technical knowledge to decide what the specifications on a given project are, this can no longer be done.

And the problem is compounded when the item to be bought is of such complexity and technology that perhaps only two or three companies in the nation have the technical competence to build it.

With this in mind, and considering the amount of money Defense Department spends on ultra-complex items of hardware, it is perhaps more surprising that Defense is able to maintain as much competition in its contracting as it does.

While advertising is the simplest, most direct and effective way of obtaining competition, it is a long shot from the only way this can be done.

Competitive negotiation, competitive source selection, two-step advertising—these are only a few of the techniques that have been developed to meet the challenge of providing competition in defense procurement.

Wrap-up

Another factor tending to distort the competition picture is the fact that most of the Defense dollars are spent in the actual procurement area. This means money is spent after early research and development work has been completed.

In criticizing "negotiation" on such production contracts, it is easy to overlook the fact that extensive competition may have been conducted in awarding the initial research and development contract.

This factor can be compounded by the high cost of weapons production. To get a contractor started on a major project, the Defense Department often must invest many millions of dollars to build the necessary capability into the contractor's facilities.

To do this and then to pull out the contract to throw it open to advertised bids would be an outright waste of time and money.

Because the Defense Department spends more money than any other single organization in the world, it is often much too easy to single it out as being wasteful, inefficient and a host of other things. In a business where an error of .0001 adds up to $4-million out of a $40-billion budget, a single $500,000 mistake is perhaps not as bad as it might seem, taken in context.

This is not to say that improvements cannot be made. But it would be equally unfair to say that Defense isn't working to make these improvements.

Muses one Navy officer, "We have about a million people in the Navy, civilian and military. If each of them made one minor mistake a day, we'd have a million mistakes on our hands every day in the year. I'm sometimes surprised we do as well as we do." ■

Supply and Logistics

Where the Money Can Be Saved

AMONG PROFESSIONAL gamblers, there is an old adage that runs something like this: "If you want to make money, go where the money is."

It is a point of departure not too far divorced from this adage that has made supply management one of the most active areas in Defense management during the past year.

The reasoning: With a total defense inventory of somewhere in the neighborhood of $118-billion, it simply stands to reason that there is money to be made in the management of supplies.

With this basic point in mind, and with the pressures of a tight budget and a cost-conscious Congress to contend with, it is not surprising that some of the heaviest guns of Defense management have been brought to bear in this particular area.

Nor is it surprising that considerable results have been the outgrowth of the efforts expended.

From one point of view, there is probably no area of Defense operations that has less sex appeal than supply management: the fact that seven types of vacuum-sprung manipress bolts have been eliminated from the Defense Department inventory is not likely to make page one in anybody's newspaper.

But through the eyes of the scapegoater there is probably no easier target. That Army is shipping tomatoes to Maine from California while Navy ships tomatoes from Maine to California is a situation that provides instant press, public and Congressional reaction.

At least part of this seeming lack of balance in what is and isn't news in the supply management area stems from a ridiculously simple factor.

Practically anyone can grasp the incongruity of having three kinds of wrenches to turn the same kind of bolt. No householder in the country would stock his workbench in so preposterous a fashion.

What few people stop to consider is that there are not many homeowners in the country who have some three and a half million items to keep track of.

Given the obvious fact that mistakes tend to result in violent criticism, and further given so large a part of the military dollar-investment to work with, it is hardly surprising that military supply managers over the past few years have actively searched for more efficient ways of getting their job done.

Nor is it surprising that some fairly spectacular results have been made. By using a relatively new set of management tools, applied in an area previously noted only for its lack of tools, the military supply manager in the last year or so has managed to turn up some of the most positive money-saving programs to be found in the Department of Defense.

The search for better ways of doing business is one that is just coming of age, and in the future, even more worthwhile results would seem more likely than not.

Spearheaded by the Office of the Assistant Secretary of Defense (S&L), aided by Armed Forces Supply Support Center, the various Defense programs for better supply management are ones that are being picked up by all three services, and in each case the outlook is encouraging.

This is not to say that the services themselves are playing follow-the-leader. Much to the contrary, Army, Navy and Air Force, individually and jointly, are working equally hard. In fact, many of the techniques now in practice at DOD level are ones that have come up through the ranks in the services.

Defense Department is presently working harder—and getting bigger payoffs—in supply management than it ever has in its history. To understand why this is the case, it is worth taking a look at some of the historical background.

Prior to World War II, the military forces of the nation were at barest skeleton strength. Demands on the supply systems of the Army and Navy were relatively light, and offered not much challenge to the supply manager.

Further, not enough money was involved to justify many of today's programs. There are, for instance, automatic data processing machines in use today that cost more than some entire defense budgets prior to World War II.

History of Change . . .

With the start of World War II, immediate pressures and undeniable priority of all things military resulted in sound supply practices going pretty much by the board.

The job on hand was to win a war, and if ordering three of everything was the fastest way to insure the fighting man had one of what he needed, this is exactly what was done.

Thus, from an inventory that could only supply trucks as tanks for training operations, the military system bulged almost beyond belief to support what amounted to two major wars—one in Europe and one in the Pacific.

At the end of the war, the military supply system reacted just about like a pricked balloon. Islands in the Pacific were paved with surplus supplies, and the entire system contracted almost as violently as it had expanded.

With Korea, the process began all over again—the tremendous buildup from a slow start with wartime priorities overriding optimum management to handle the immediate task.

Any attempts that had been made to improve the system between the two wars were postponed for the duration, and the military supply manager had to worry about more immediate problems.

With the signing of the Korean truce, there was one major difference facing the military manager, in comparing the situation with the end of World War II.

It was plain that the military system was going to have to support itself at near wartime levels for quite some time to come. And it was going to have to do its job without a wartime budget.

The Implications

The implications were obvious: compared to wartime, a relatively low level of spending; but compared to previous peace time military budgets, an extremely high one. Thus, each dollar spent had to get one hundred cents worth of goods, equipment or services. There was simply no room for waste.

The comment of one Pentagon manager sums it up: "For the present, and for the immediate future, its fairly obvious that we aren't going to get much more money to work with. We simply have to create more dollars out of what we have. Given the inflationary factor that we have to deal with, it's a fight to stay even—much less come out ahead."

If in the past the military has had to work with larger inventories in terms of dollars than it does today, it was without the budgetary pressures that they are now facing.

As a result, it is generally fair to say that never before has good supply management been as essential as it is in the present military establishment.

To carry it one step further, the peacetime military supply manager in the past never had to manage amounts of material comparable to the ones he must deal with today. In wartime the demand for actual management was slight, in peacetime the supplies were a pittance compared to the present.

From another standpoint, it wasn't until after Korea that the Defense Department was in a position to attempt any really effective overhaul of its supply system.

Until some sort of organization existed to bring the problems of the three services together in one place, anything done aong these lines was necessarily handled in isolation by the service involved.

There was, for instance, no protection against Army and Navy crisscrossing trainloads of tomatoes across the country—they simply didn't have the mechanism for coordination.

Defense Department itself, and more specifically Armed Forces Supply Support Center, are both relatively recent creations. New enough, at least, so that their effective weight couldn't be felt until a couple of years ago. (AFSSC is even newer than Defense, came into being only two years ago.)

This was the big step needed to get an overall view of the Defense supply picture, and with this means of coordination, the wheels began to turn.

Overhauling an operation as large as Defense supply management is not the sort of job that can be turned out in a couple of months. It is a job that takes time, effort, patience, and the ability to cope with fantastically large numbers of supply items, systems of doing business and just plain headaches.

As a result of this, one Pentagon executive sums up the past year's work this way: "In the past year, we have made more significant advances in the area of supply management than we have in any year in the past. Programs that have been in the mill for years are just beginning to pay off.

"We've had more Congressional hearings in the past year than we had in the six years preceding, and we've been able to tell them that we've cleaned out under more of our rugs than we ever have before. The efforts we've put out for the last two or three years are beginning to really bear fruit."

Two of the real keystones in this management structure are the Federal Catalog system and Automatic Data Processing. And as is true of other supply management areas and techniques, these have truly come of age in the past couple of years.

Preceding AFSSC, although it is now a part of it, the Federal Catalog system provided one vitally important factor to the Defense supply clean-up. For the first time, the military manager could look to one place to find out just exactly what there was in the total supply system.

The Army supply manager could find out what his Navy counterpart had on hand in the way of inventory and use this knowledge in doing his own job.

From this basic knowledge, a number of significant management techniques were possible. Coordinated surplus disposal, defense-wide standardization, interservicing of supplies and better utilization of supplies in the overall inventory are some of the major ones.

ADP's Effect

While the foregoing provides interesting theory, actually one other management tool was needed to put the theory into meaningful practice—automatic data processing.

Dealing with nearly three and a half million line items Defense would have found it nearly impossible to accomplish any worthwhile work without the tremendous, volume-capacity and speed of ADP, and the resultant ability to break out data into specific increments in a hurry.

As an example, the availability of ADP equipment within the Air Force was one of the influencing factors in its decision to conduct an Air Force-wide wall-to-wall inventory this year.

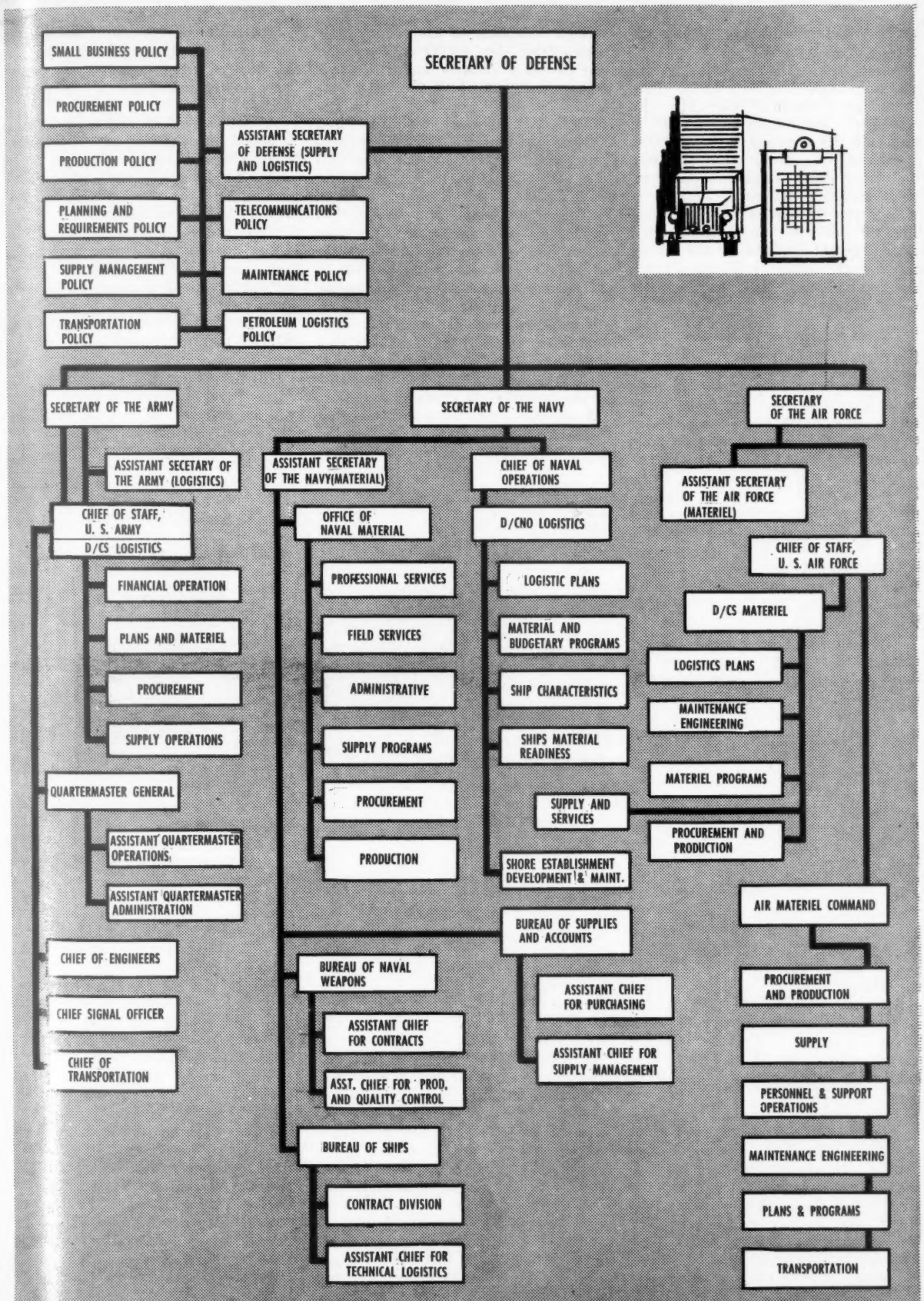
With the ability to handle this much volume came the opportunity to begin a complete overhaul of defense supply operations.

From a top-level standpoint, the focal points for cataloging and data processing are in the Cataloging and Data Processing Divisions of AFSSC.

A far cry from anything that Sears Roebuck might put out, the actual federal catalog consists of literally hundreds of bins crammed with identification cards for the nearly three and a half-million items in the Defense system.

For the present, the job of the cataloger is one of finding new and better ways of working with accumulated information, coupled with expanding the number of participating organizations.

This is to say that the foundation has been laid. For the future, the job will be, in the words of one manager,


SECRETARY OF DEFENSE
SMALL BUSINESS POLICY
PROCUREMENT POLICY
PRODUCTION POLICY
PLANNING AND REQUIREMENTS POLICY
SUPPLY MANAGEMENT POLICY
TRANSPORTATION POLICY
ASSISTANT SECRETARY OF DEFENSE (SUPPLY AND LOGISTICS)
TELECOMMUNCATIONS POLICY
MAINTENANCE POLICY
PETROLEUM LOGISTICS POLICY
SECRETARY OF THE ARMY
ASSISTANT SECETARY OF THE ARMY (LOGISTICS)
CHIEF OF STAFF, U. S. ARMY
D/CS LOGISTICS
FINANCIAL OPERATION
PLANS AND MATERIEL
PROCUREMENT
SUPPLY OPERATIONS
QUARTERMASTER GENERAL
ASSISTANT QUARTERMASTER OPERATIONS
ASSISTANT QUARTERMASTER ADMINISTRATION
CHIEF OF ENGINEERS
CHIEF SIGNAL OFFICER
CHIEF OF TRANSPORTATION
SECRETARY OF THE NAVY
ASSISTANT SECRETARY OF THE NAVY(MATERIAL)
OFFICE OF NAVAL MATERIAL
PROFESSIONAL SERVICES
FIELD SERVICES
ADMINISTRATIVE
SUPPLY PROGRAMS
PROCUREMENT
PRODUCTION
BUREAU OF NAVAL WEAPONS
ASSISTANT CHIEF FOR CONTRACTS
ASST. CHIEF FOR PROD. AND QUALITY CONTROL
BUREAU OF SHIPS
CONTRACT DIVISION
ASSISTANT CHIEF FOR TECHNICAL LOGISTICS
CHIEF OF NAVAL OPERATIONS
D/CNO LOGISTICS
LOGISTIC PLANS
MATERIAL AND BUDGETARY PROGRAMS
SHIP CHARACTERISTICS
SHIPS MATERIAL READINESS
SUPPLY AND SERVICES
SHORE ESTABLISHMENT DEVELOPMENT & MAINT.
BUREAU OF SUPPLIES AND ACCOUNTS
ASSISTANT CHIEF FOR PURCHASING
ASSISTANT CHIEF FOR SUPPLY MANAGEMENT
SECRETARY OF THE AIR FORCE
ASSISTANT SECRETARY OF THE AIR FORCE (MATERIEL)
CHIEF OF STAFF, U. S. AIR FORCE
D/CS MATERIEL
LOGISTICS PLANS
MAINTENANCE ENGINEERING
MATERIEL PROGRAMS
PROCUREMENT AND PRODUCTION
AIR MATERIEL COMMAND
PROCUREMENT AND PRODUCTION
SUPPLY
PERSONNEL & SUPPORT OPERATIONS
MAINTENANCE ENGINEERING
PLANS & PROGRAMS
TRANSPORTATION

to "find better ways of keeping the data lean and useful."

Among the techniques aimed in this direction: AIR—the Accelerated Item Reduction Program. Under AIR, the aim is to clean house—to get rid of duplicate and unnecessary items in the system. AIR is set up in three steps, the first of which is basically complete, and the second well under way.

First step in AIR was to spot some 117,000 items in the inventory that clearly looked like they didn't belong there, and simply drop them. This done, AFSSC sat back to see what would happen.

Cutting Inventory

Of the total number, only 5% have been reinstated, and the total inventory is some 100,000-plus items cleaner than when this phase of the program started.

Second step is a matter of using the ADP available to spot items that appear to conflict. Under this general heading of "conflict" fall some 60% of the items in the federal system.

Obviously, AFSSC expects nothing this high in the way of actual housecleaning returns, but greater purification is inevitable.

Third step will be a matter mostly of standardizing where possible on the items that are still left after steps one and two.

In terms of a progression, the first step in AIR was a job for the clerks, the second a task for the automatic data processing machines, and the third a job for the engineers.

AIR, then, is a step-by-step purification of the system, filtering out in an ever-narrowing progression those items that either don't belong in the system or that could be replaced more efficiently by other items.

Comments Navy Capt. E. T. Dobbyn, Chief of the AFSSC Cataloging Division, "We have the only complete catalog files that exists to my knowledge. This in itself, of course, doesn't mean much. We can't indulge in cataloging for the sake of cataloging. We can only act as a sort of launcher for other programs. A catalog such as ours really isn't a very sexy item until you begin to use it."

Perhaps one fair measure of the use of the catalog system—and what it's worth—is offered by the number of people who are interested in using it outside of the Defense Department.

Although the catalog has never been "sold" the management results have sold themselves. Besides DOD, General Services Administration has moved in, along with a number of other government agencies.

The latest—and perhaps more significant—addition to the catalog rolls comes from the NATO nations, who are currently phasing many of their supply items into the U.S. catalog system.

Holland, Germany, Norway and Canada are adopting "very aggressive" programs in getting into this area, and it is more than likely that other nations will follow suit in the future.

This means, among other things, that the age-old language barrier, inevitably a problem with an organization such as NATO, will disappear. With all of the nations using the same stock numbers, there will be little or no need for language beyond those stock numbers in many of the transactions that it takes to keep NATO forces supplied.

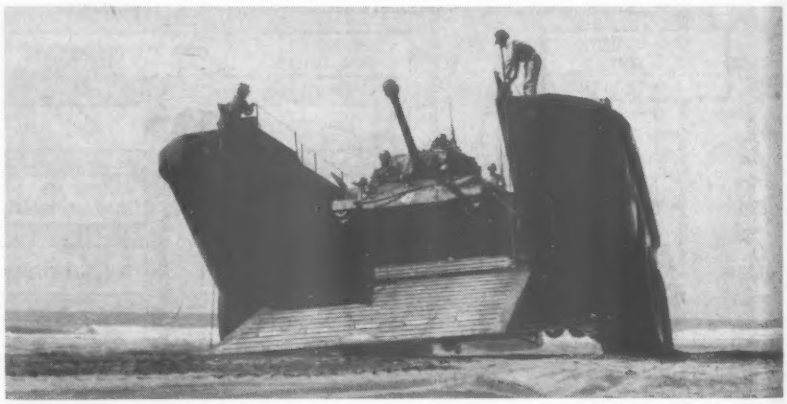
A growing realization of the value of Automatic Data Processing in military supply operations is one factor that has contributed much to progress in the past year.

The job of the Air Force office is to coordinate all ADP operations in the AF system, from buying new equipment to the actual use of equipment on hand.

At both inventory control points and at actual major issuing agencies, Army and Navy have found ADP a valuable tool in handling the large volume transactions that are fundamental to the military supply business.

Given the foundation of the catalog system and the ADP tool to work with, there are a number of specific areas in which various agencies of the Defense Department are working.

There is probably no branch of AFSSC that must work more closely with industry than the Standardization Division, under Army Col. E. T. Wiley. The obvious reason: unless industry can be induced to provide standard parts and equipment to the military, there is really little that the military can do to standardize its own inventory.



As depicted here, the object of all this study in improving supply is to have the hardware on the firing line with the least delay.

At AFSSC, ADP is a proven tool, and one due for expansion. The number of ways that the AFSSC IBM 705 can be used to help out with the job are at this point outrunning the machine's capacity, and installation of a newer, larger machine is set for the near future.

(Also in the automatic data category, although not exactly in the straight ADP class is one other device AFSSC has at its disposal. This is the only existing tri-service communications net, connecting AFSSC with major inventory control points in each of the services. Major job of the net is to keep AFSSC informed on an almost hourly basis of any changes in the status of the inventories of the three services.)

Actually, a much wider variety of ADP operations in the supply area is to be found in the services themselves. Enough, in fact, so that the Air Force has seen the need to set up a central ADP management office at Air Materiel Command Headquarters.

Actually, the best measure of industry cooperation along this line is that standardization—like cataloging—is an area that is branching out into new fields of operations.

Having met most of the obvious and basic needs of equipment standardization, the job of the standardization worker in the military is now to find other ways he can make the job of the military supply manager easier, and keep his own art current with the times.

In one area, that of reliability, work has recently been done to try to build this factor into military electronic components. Working with the Director of Defense Research and Engineering, AFSSC's Standardization Division has moved to get out a set of specifications that will state the needs of Defense Department in the terms of reliability.

The attitude expressed on this par-

ticular program is perhaps typical of that shown on other programs: "We have no idea of coordinating and re-coordinating this one until it becomes ancient history. We feel it's much better to go ahead and do it, then wait and see what happens."

What is probably the most significant program currently in the mill in the Standardization Division has actually little to do with hardware, or for that matter pure supply management.

In the long run, however, the military supply manager will certainly benefit from the system that has been set up for standardized engineering documents. In point of fact, when the problems of standardizing hardware are considered, standard documents should go a long way towards making the job easier.

The development of Mil-D-70327 aimed at setting up a single format for the engineering documents and drawings that are a part of just about every defense contract. Implications of the program are far-reaching.

In the past, just about everybody and his brother had a slightly different set of requirements on what should appear on an engineering drawing, and how the information should be presented.

This meant not only that the various agencies of the Defense Department had a tough job trying to talk to each other, but that the defense supplier would, in many cases, be literally buried in requirements for different sets of drawings, each a slightly different format.

Doubly frustrating was the fact that all of the documents in question carried basically the same information. And in spite of this, the piece of paper describing item A for Air Research and Development Command couldn't be used by Navy's Bureau of Weapons without being re-drawn.

Standard Format

And there was a good chance that the contract would have to follow a different format in submitting the drawing of this same piece of equipment to Air Materiel Command.

What AFSSC decided to do: sit down with industry and the agencies of Defense Department and figure out just exactly who needed what in the way of information, and what would be a method of presentation acceptable to all concerned.

The result: Mil-70327, setting forth the standard format for engineering drawings.

The next step, and the one currently in the mill, is to take the drawing specification, farm it out to the people who have been using it since its first release, and see what changes have to be made. Again, the philosophy of "let's do it and see what happens."

Aim of the current effort is to clear up the gray areas that have come to light through actual use of the document. Both industry and the miltary will be called upon to spot those areas of the specification that have given them trouble, or that lend themselves to varying interpretations.

The Real Payoff

In the simplest possible terms, the job of the Material Utilization Division of AFSSC is to make sure that one part of Defense isn't selling equipment at the same time another segment of the organization is buying the same thing.

But as is often the case, the simplest explanation of the job is not the most accurate of representative.

In the first place, the items that must be monitored under the general job description number in the millions.

In the second place, the organizations to be monitored under the general definition are scattered all over the world, number in the thousands, and in the vast majority of instances have no method of direct communication among themselves.

In terms of demonstrable dollar return, it is probably this division of AFSSC that stands to be able to make the most mileage. Where Standardization and Cataloging, offer that are primarily management benefits, the work handled by Material Utilization relates directly to hardware.

At the end of a successful job, it is possible for this division of the Center to say "in this case we prevented Army from selling X commodity as a surplus item, and transferred it to the Navy inventory, where they were ready to go out and buy it. This means savings in the amount of Y dollars to the government."

Plainly, the key to success in this area is effective communication—or at least a central point at which changes in inventory can be screened.

The simplest technique used by Material Utilization is the matter of screening all excess material, to make sure that nobody else needs it before it is shipped over to General Services Administration for government-wide screening.

In the 30-day screening period, AFSSC not only checks out the various Defense agencies, but also those areas of the military assistance program that might conceivably have an interest in the equipment being screened.

Going one step further, Material Utilization keeps track of many of the wholesale buying activities in the Defense Department, to make sure that no one is buying what ever the would-be surplus is.

Using the Center's IBM 705, Material Utilization matches the buy and sell lists for location of the item, condition of the item, and its engineering configuration (with an eye to its obsolescence.)

On a more personal basis, a specific sales pitch may be used if it looks like an organization has overlooked normal notification of the surplus item, or is being too finicky in its requirements.

(In one case where this technique was used, several thousand dollars worth of chain link fence was saved from the surplus rolls because somebody noticed a buy request for similar fence of a slightly different height.)

It is in the area of more accurate, precise definition of line items of supply that this part of AFSSC is currently working.

What is Needed

Comments P. M. Somerville, Assistant Chief of the Division, "We know there is, for instance, a greater degree of item substitutability than we can find now. What we really need is more of a layman's language, some sort of a compromise between the common language of the catalog stock numbers and the understandable 'paint, can, red, one each.'"

One step in this direction has been an attempt to inject a reliable statement of condition of the item in question. But as Somerville points out, "It's like trying to assign a numerical value to a used car—it depends whether you are buying or selling."

Not only is this particular problem a sticky one, but it is compounded by a number of factors. Tremendously close coordination is needed to make such transfers effective, and coordination must be handled in a hurry to prevent a change in status of the supplies that are being considered.

Also, while mistakes of any kind are to be avoided, in this area just about any mistake that is made involves a three-fold penalty.

First, it costs money. Second, there is considerable wasted effort—by the man who was trying to unload whatever equipment it was, the man who wanted it, and at the Center itself.

Third, and in many cases most important, the lead time that is needed to re-order the equipment in question is time that has to be waited out all over again.

Closely connected with the determination of such considerations as condition of the equipment to be surplused are the various technical factors that enter into any decision.

With this in mind, AFSSC is considering the possibility of using the

Commodity Coordination Groups to provide them with the necessary technical competence to look into these areas.

The 32 Commodity Coordination Groups were set up to get the three services together on various management and technical considerations that would make inter-servicing of supplies more workable and profitable.

While the groups have done most of their job in this respect, they could still be available as a source for technical determinations in a number of supply areas. Such decisions as agreeing on standard electronic stock numbers for two or more services would be the kind of work they could help with.

Given the basic asumption that centralized information and effort is one of the most important factors in a Defense Department supply management program if it is successful, one of the most useful items to come along in some time is the Defense Materiel Management Program—DMMP.

This is the first all-service effort to tackle some of the more annoying headaches Defense Department has had to wrestle with over the years.

The 26 point study will be followed up with another one in 1961, as a continuation of the one currently being worked on.

In a forward to the actual DMMP, Defense Assistant Secretary for Supply and Logistics Perkins McGuire had this to say:

"The twenty-six inter-related projects comprising the program are designed to achieve further integration of material management in the Department of Defense. The continuing efforts of the military services to improve their intra-service supply activities are not reflected in this program.

"The program is the latest of a series of logical steps in a dynamic plan to integrate material management in the Department of Defense without disrupting the complex world-wide military supply systems and thus impairing the ready-to-fight posture of the Armed Forces . . ."

It is worth looking at one or two of the specific projects.

One of these, which draws its significance from its close relation to the front-line forces of the nation is to develop policies for supplying common items to unified commands overseas.

The Goal

The goal: to find the best method of supplying common categories of materiel to overseas unified commands.

The Single Manager is a peacetime creation, one which has developed since Korea and thus has never had a trial by fire.

As a result, another of the DMMP projects will be to develop, to the extent practical and desirable, uniform and simplified procedures which will improve the efficiency and wartime readiness of Single Manager Operating agencies.

A progress report issued by the Defense Department in part provides an excellent summation of what has been going on for the past year or so within the Pentagon in terms of supply management. Barely skimming over the top:

". . . Integration of Defense Management is not only a watchword, it is a reality.

"New methods to determine the requirements of a balanced defense program were developed and installed in all of the military services.

"The biggest accounting, identification and cataloging job in the history of the world was accomplished, and, when it was done, there was, for the first time, central knowledge of what was owned, where it was, and what it could be used for.

"Equipment and supplies not meeting the military standards of today for reasons of wear or obsolescence are being used in civil defense, health and education programs at a rate of almost $400-million per year.

"Military supply inventories are being reduced at a rate of $3.5-billion per year ($7.3-billion in the past two years).

"Military warehouses covering 41 million sq. ft. of space have been closed, and 17-million sq. ft. of this space already transferred for other government or commercial use.

"In addition to the savings in materiel, the cost of operating the military supply system has been reduced by $100-million per year.

"These management savings have not been at the expense of our military readiness position. Despite the new concepts and the sweeping technological changes, the rated military inventories are better balanced than ever before.

"Most important of all, business management in the Defense program is now embarking on a new, still more advanced era. Essential and significant as they were, the accomplishments of the past several years are just the building blocks for a defense management structure which is under active construction by Defense managers.

"The details of this advanced management plan have been provided to the Congress and the American public can be assured that evaluation of all of the facts demonstrates effective and economical management of procurement and supply operations in the Defense program."

WASSELL INC.

Wassell Rotary WORK ORGANIZERS Bring Every File To Life

For correspondence, for orders, for every record, Wassell Work Organizers—Corres-Files and Rotor-Files — pay off in new highs of clerical productivity and morale, plus economy.

Finding and filing takes half the time. Wassell units **whirl the work to the worker's fingertips** on merry-go-round tiers. Save you space, too—up to 50%. Find out more—today.

ANOTHER WASSELL PRODUCT

WASSELL ORGANIZATION, INC.
DEPT. C-11 • WESTPORT, CONN. • CAPITAL 7-4111 • EST. 1935
Please send me details on Wassell Rotary Files.
NAME_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE_____ STATE_____
Exclusive Wassell franchises are available. Please write for an interview.

The perennial bogeyman:

Why the Budget is the Cold War Key

SOMEBODY ONCE SAID the easiest way to reduce a jovial party of military planners to absolute gloom was to shriek "Budget!" at the top of your voice.

To at least one segment of military, the slogan is "Help Stamp Out Comptrollers," and the stereotyped comptroller is aged about 94, wears a green eyeshade and stands at a desk because buying a stool would disrupt the national economy.

As George Gershwin once pointed out, "It ain't necessarily so."

There is probably no segment of Pentagon management that works harder for less credit to get the job of national defense done than does the perennial bogeyman, the comptroller.

Basically the job of the budgeteer is this: to stand between the irate strategist and the implacable politician and translate the impossible demands of both into a program that each can live with.

Depending on whom you talk to, the job is done either by compromising national defense to the point of capitulation or by compromising the national economy to the point of chaos.

All comptrollers are secretly on the payroll of General Accounting Office, and they would—if they had their way—build the carrier Enterprise without heads ("washrooms," for the land-bound).

But to some cost-conscious Congressmen, it would seem infinitely better to build the heads in the Pentagon and forget about the Enterprise.

Scheming under his eyeshade, it is the comptroller who slashes all squadrons in Tactical Air Command by .03 aircraft—and insists that the airplanes that are flying are up-to-date and fully equipped.

By occult communication with the Bureau of the Budget, the military comptroller reportedly withholds most of what little funds are available to the Defense effort.

And yet it is the comptroller, with his own legislative liaison staff, who in the final analysis has to justify the military budget on Capitol Hill.

The overall problem stems from a situation in which a peacetime budget has to support what amounts to wartime military forces. On the face of it, the situation contradicts itself.

But in spite of this, the comptroller must deal with the people who are trying to maintain the wartime strength, while fending off other elements of the government which are trying to hold down the spending.

All in all, it is little wonder that legislative liaison in the Pentagon is generally broken into two separate categories, one for routine work and another for the budget.

One measure of the importance of the job: Below Secretarial level, the only point at which the entire budget of a given service—or for that matter, of DOD—is considered as a whole is in the comptroller's shop.

This means that from a budgetary standpoint, the Defense Department tends to turn on the pivot of its comptrollers.

The job is one of translation. It is a matter of taking the needs of the military forces in Defense Department, and putting them in the language of dollars and cents.

Without the military force, there would be no need for comptrollers. But without comptrollers, the job of the military forces would be immeasurably harder than it already is.

Underlining the importance of the job is the situation in which the military must operate today.

The present Cold War is a factor that places a greater responsibility on the Comptroller than has ever been true in the past.

With the nation facing what is obviously going to be a long, drawn-out struggle, it is forced into the position of having to operate on a long-haul basis.

Unlike an actual hot war, where budgeting is a matter of getting what's needed to fighting forces as fast as possible with little regard for cost, the cold war creates a situation where

What Happens On the Hill

(Thousands of Dollars)

Department	President's Budget Requests	House Committee Action	House Floor Action		Total Requested of the Senate	Senate Committee Action	Senate Floor Action		Final Congressional Action	
		Change from President's Requests	Change from Committee Reports	House Approvals		Change from House Bills	Change from Committee Reports	Senate Approvals	Change from President's Requests	Conference Reports and Congressional Approvals
Department of the Army	9,546,000	+26,249	–1,767	9,570,482	9,554,450	+189,408	+90,100	9,849,990	+173,970	9,719,970
Department of the Navy	12,013,000	+48,703	–569	12,061,134	12,056,629	+312,914	+40,000	12,414,048	+263,411	12,276,411
Department of the Air Force	17,737,000	–356,917	–6,687	17,373,396	17,685,942	+734,490	–	18,107,886	+48,107	17,785,107
Office of the Sec. of Defense	1,227,000	–18,000	–	1,209,000	1,210,500	+1,300	–	1,210,300	–17,025	1,209,975
TOTAL—Dept. of Defense	40,523,000	–299,965	–9,023	40,214,012	40,507,521	+1,238,112	+130,100	41,582,224	+468,463	40,991,463

Seeing the forest, not the trees . . .

careful budgeting is one of the basic weapons at the disposal of the military.

Only by walking the fine line between an effective defense force and a stable economic situation can the cold war be handled over a long pull with any success.

What exactly does the comptroller stand in this situation? From a negative standpoint, in the words of one DOD level executive, "Of course, we can't tell the services what they should or should not buy. On the other hand we are in a position to recommend what might look like a better idea in a given situation.

"And from our central position on budget formulation, we often see things that are not apparent to others. We sit where we can look at the forest instead of seeing nothing but trees."

Job Breakdown

It is worth quoting the job description under which the budget function is fulfilled at the Defense Department level. The job looks like this:

–Develop and coordinate guidelines for preparation of budget estimates and supporting data for the departments and agencies of the Department of Defense.

–Supervise and coordinate the preparation of such budget estimates for submission to Bureau of the Budget. In this connection, monitor, review and integrate the budget recommendations of the interested Assistant Secretaries of Defense.

–Analyze such budget submission including requirements and other supporting data as to consistency, adequacy, feasibility, costs and conformity with overall Defense programs and policy.

–Arrange for and participate in justification of budget estimates before Bureau of the Budget and prepare detailed justification data for presentation by Defense Comptroller before Congressional committees.

–Analyze requests of departments and agencies of the Defense Department for apportionments and recommend appropriate action to higher authority.

–Analyze progress reports on execution of departmental budget programs and make pertinent field inspections related to financial management and recommend appropriate corrective action to higher authority.

–Review and comment on legislative proposals and develop cost estimates thereon.

–Develop budget methods, including appropriation account structure.

–Maintain effective liaison with appropriate departmental agencies and other government departments.

At the Defense level, these responsibilities are carried out under a system designed to give maximum efficiency in the entire process. Coverage is both vertical and horizontal, with people responsible on the one hand for the services themselves, and on the other hand for various functional areas of the budget (Personnel, Research, Procurement, etc.).

But it is probably safe to say that the best organization in the world wouldn't be good enough to make the budget job easy. And if it has been difficult as a general rule in the past, the election year situation that the military budget builder faces this year will only complicate the job.

While it is unlikely that the outcome of the election will throw all previous work on the budget into a cocked hat, it is equally unlikely that the election—regardless of who wins—will leave a *status quo* Defense budget.

For a number of reasons—not the least of which is the budget cycle itself—it is likely that most of the post-election changes in the budget will be of a patchwork nature.

First foundations of the 1962 budget were laid at about the time that the 1961 budget was presented to Congress, last January. By the time the new President is inaugurated in January, the Eisenhower budget will have been at the printer's for the best part of a month.

The Future

In short, most of the work on the fiscal 1962 budget was out of the way before the election even took place.

On the other hand, both political parties argued for a more vigorous approach to the defense problem, with a definite implication that more money will be spent in the coming year.

The outcome will probably be some compromise along the lines of either a supplemental request over the Eisenhower budget, or less-than-major amendment to the Eisenhower budget before it is presented to Congress.

(In 1952, when the Eisenhower Administration took over, there was a fairly thorough re-write of the Truman Budget. But the revisions were downward, dictating a more thorough approach than add-on measures.)

It would be inaccurate to say that the work the Pentagon budget force is doing at present is wasted effort.

The reason: Regardless of politics, any modification in the Defense budget must necessarily be based on a solid fiscal foundation. It is this foundation that is presently being laid in the Pentagon.

Assuming there will be extra money in the 1962 budget—which seems likely—it will probably be spent on a spot basis. In other words, whatever in the way of extra funding is pumped into Defense will probably go for specific programs. More Polaris submarines, extra cash for the B-70, or increased modernization of Army's airlift would be examples.

This sort of change does not imply a new and different budget. At the outside, the increase in Defense spending is likely to be small—if considered in relation to Defense spending in the recent past. It is, for instance, unlikely that Defense spending will "soar" next year much beyond $42-$43 billion.

Reduced to dollars rather than programs, this means that it is highly improbable that the Defense budget for 1962 will ride much higher than about half a billion dollars to $1.5 billion over what it has been in the past.

There are unquestionably areas in which more money will be spent. But these areas are so specific (programs would be a better word) that the effect on the total budget will be slight.

As one measure of the situation, there is a hopeful note in one Navy man's voice when he says "We are asking for $230-million for anti-submarine warfare research and development funds this year. That figure will allow us to hold the line. It will mean that we won't get less than we did in the '61 budget."

But neither will it mean that Navy will get more, in what is admittedly one of the most vital areas of their operations. For with the initial $180-million assigned to this area, and $50-million added on later in the year, this is exactly what the Navy had last year for ASW.

What all this means is that for fiscal 1962, the economic picture in the Department of Defense is not much brighter than it was under the Eisenhower administration, campaign promises notwithstanding.

It means that the new President will probably find himself hamstrung by fiscal commitments in other branches of the government, along with such problems as a markedly unfavorable overseas balance of payments.

It means the new President is going to have to move slowly on any major increase in the Defense budget simply

because such increases tend to perpetuate themselves. A billion a year between now and 1970 adds up to a Defense budget of $50-billion in 1970; and the $3-billion a year figure runs 1970 Defense expenditures up to something over $70-billion.

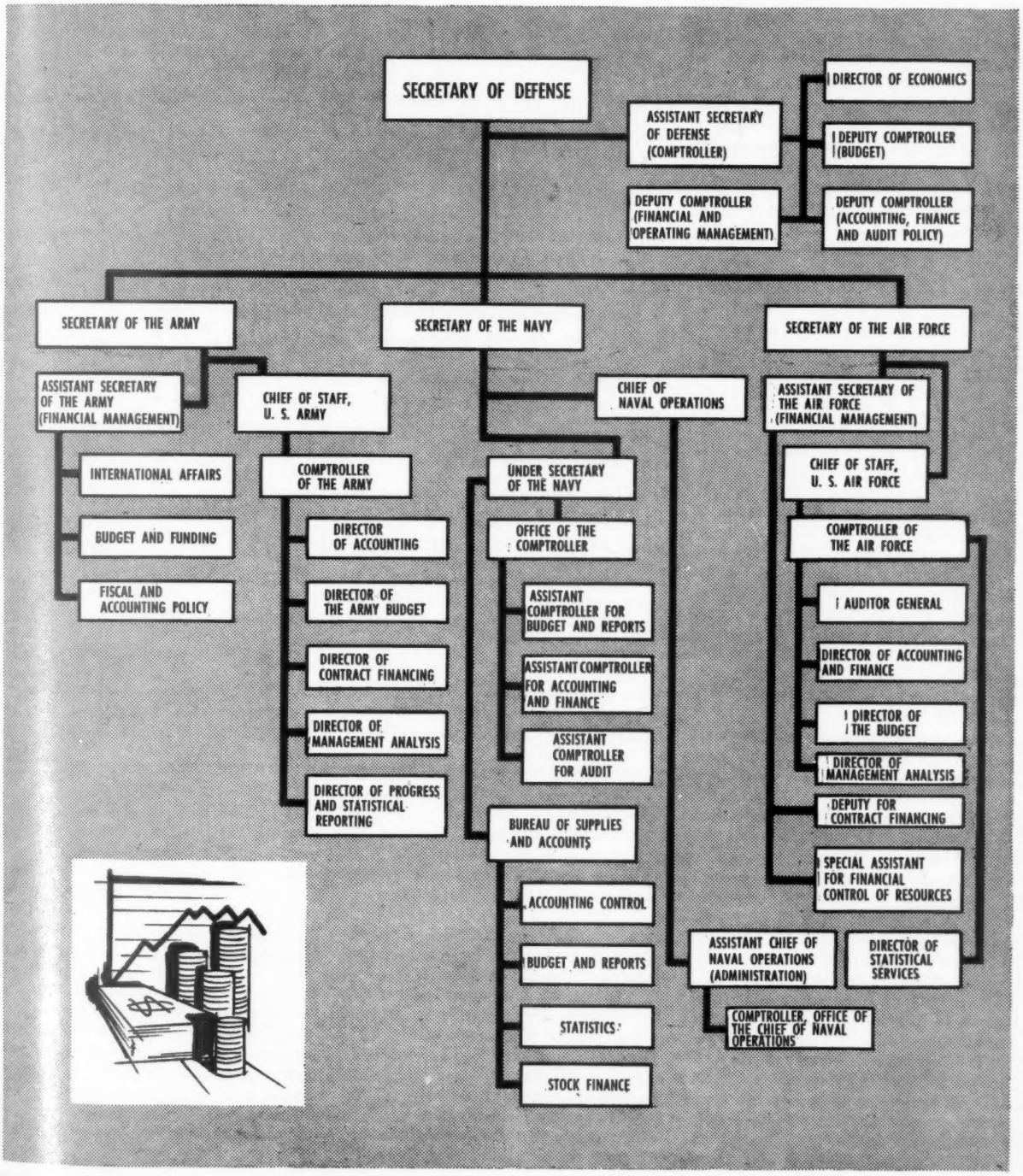
If such seemingly dire predictions emanate from the stereotyped man with a green eyeshade, it is perhaps because this is the man who is used to working with dollars rather than operational requirements.

There can be little question that the budget function within the general Comptroller area is the one function most often given the benefit of headlines.

And while this is the situation, it is also only fair to consider the other areas in which the comptroller works to get his overall job done.

By way of oversimplification, there are two phases to the Comptroller's job. First of these is to make sure that the military gets the money it needs to do its job in the most economical fashion possible. The second half of the task is to make sure that the military spends the money it gets—again, in the most economical fashion possible.

How the Teams are Organized . . .


SECRETARY OF DEFENSE
ASSISTANT SECRETARY OF DEFENSE (COMPTROLLER)
DIRECTOR OF ECONOMICS
DEPUTY COMPTROLLER (BUDGET)
DEPUTY COMPTROLLER (FINANCIAL AND OPERATING MANAGEMENT)
DEPUTY COMPTROLLER (ACCOUNTING, FINANCE AND AUDIT POLICY)
SECRETARY OF THE ARMY
SECRETARY OF THE NAVY
SECRETARY OF THE AIR FORCE
ASSISTANT SECRETARY OF THE ARMY (FINANCIAL MANAGEMENT)
CHIEF OF STAFF, U. S. ARMY
CHIEF OF NAVAL OPERATIONS
ASSISTANT SECRETARY OF THE AIR FORCE (FINANCIAL MANAGEMENT)
INTERNATIONAL AFFAIRS
BUDGET AND FUNDING
FISCAL AND ACCOUNTING POLICY
COMPTROLLER OF THE ARMY
UNDER SECRETARY OF THE NAVY
CHIEF OF STAFF, U. S. AIR FORCE
DIRECTOR OF ACCOUNTING
DIRECTOR OF THE ARMY BUDGET
DIRECTOR OF CONTRACT FINANCING
DIRECTOR OF MANAGEMENT ANALYSIS
DIRECTOR OF PROGRESS AND STATISTICAL REPORTING
OFFICE OF THE COMPTROLLER
ASSISTANT COMPTROLLER FOR BUDGET AND REPORTS
ASSISTANT COMPTROLLER FOR ACCOUNTING AND FINANCE
ASSISTANT COMPTROLLER FOR AUDIT
BUREAU OF SUPPLIES AND ACCOUNTS
ACCOUNTING CONTROL
BUDGET AND REPORTS
STATISTICS
STOCK FINANCE
COMPTROLLER OF THE AIR FORCE
AUDITOR GENERAL
DIRECTOR OF ACCOUNTING AND FINANCE
DIRECTOR OF THE BUDGET
DIRECTOR OF MANAGEMENT ANALYSIS
DEPUTY FOR CONTRACT FINANCING
SPECIAL ASSISTANT FOR FINANCIAL CONTROL OF RESOURCES
ASSISTANT CHIEF OF NAVAL OPERATIONS (ADMINISTRATION)
DIRECTOR OF STATISTICAL SERVICES
COMPTROLLER, OFFICE OF THE CHIEF OF NAVAL OPERATIONS

It is in the latter area of operations that the Comptroller probably makes the most enemies for himself. For it is in this area that he must look over the shoulder of the operating military man, point out the mistakes he makes, and, to hear some military men tell it, generally make a nuisance of himself.

But there is one fact too often overlooked, or at least only grudgingly conceded. This goes back to the basic comptroller function. As is true in the budget-making function, the job of the comptroller is to translate the military program into dollars and cents, making sure that each dollar spent is spent as profitably as possible.

Taken in this light, it is worth looking again at the job descriptions, and taking them at face value—without the implications of what so often seems like the pettiest of nit-picking in the field.

At the Defense Department level of operations, there are three Deputy Comptrollers working under Defense Comptroller Franklin B. Lincoln, Jr. The first of these is the Deputy Comptroller for the Budget, Harold R. Logan. The second two are, respectively, W. Carl Blaisdell, Deputy Comptroller for Financial and Operating Management, and H. W. Bordner, Deputy Comptroller for Accounting, Finance and Audit Policy.

Bordner's job is to establish financial management policies, systems and procedures for the Department of Defense. To do this, he has two Divisions under him, one for Auditing Policy and one for Accounting and Finance Policy. Covered under the second Division are appropriations accounting, industrial and cost accounting, property accounting and finance.

In the third area of Defense Department Comptrollership, Financial and Operating Management, the job description reads this way:

"Management evaluation of Defense Department policies, programs, procedures and operations at both departmental and field levels; contract pricing, financing and performance evaluation; progress and statistical reporting for all Office of the Secretary of Defense areas.

"Evaluation, development and promulgation of financial policies and procedures pertaining to international matters, utilization of currencies in foreign areas, foreign currency exchange rates and foreign military programs in relation to U.S. programs; coordination of development of Defense Department views of General Accounting Office reports; audit of Military Assistance Program; and evaluation of existing and proposed data processing systems."

What this amounts to is a compendium of odd but essential jobs. These are the tasks absolutely necessary to effective management, but ones that do not necessarily belong in any other specific area of the Department of Defense.

Two specific and relatively significant jobs under this segment of the Defense Comptroller are handled by the Data Systems Review Division and the Management Surveillance Branch.

The first of these offers a central screening point for business applications of automatic data processing equipment proposed for or in use by Department of Defense.

The aim is to set policy, criteria and principles in the ADP area. The job itself is one that simply wasn't being done at this level of Defense management until the office was set up.

Even newer is the Management Surveillance Branch, with one of its principle jobs being a matter of establishing policies and procedures for Defense-wide review and evaluation of General Accounting Office reports on the work of all Defense agencies.

The job of making GAO reports a useful tool in the Defense Department picture is perhaps the reverse of the usual comptroller fare. This is true in that it is a matter of translating accounting data into meaningful program and management information for the military operator.

What Makes A Budget?

(Approximate dates in the budget cycle)

Sept. 26: *Submission of FY 1962 Budget requests for RDT&E, including back-up material, by military departments.*

As soon after Sept. 26 as possible (no later than October 3) Complete *submission of budgets and all back-up material supporting FY 1962 Budget.*

Present budget to Secretary of Defense by the Secretaries of the Military Departments

Oct. 3: *Air Force.*

Oct. 4: *Army.*

Oct. 5: *Navy.*

Oct. 10-Nov. 5: *Joint OSD-BOB Staff review with military departments.*

Oct. 10-Nov. 4: *Joint Chiefs of Staff Inquiry into Major Program Content of the FY 1962 budget.*

Nov. 7-Nov. 16: *Present unresolved policy issues to Secretary of Defense.*

Nov. 17-Nov. 30: *Discussions by the Secretary of Defense with the Secretaries of the Military Departments and JCS.*

Dec. 1-Dec. 7: *Revise budget estimates to incorporate Secretary of Defense decisions and other adjustments made during review.*

Dec. 8: *Present FY 1962 Budget to National Security Council.*

Dec. 15: *Formal submission of budget to Bureau of the Budget.*

Jan. 4: *Submitted to Congress by President.*
House Subcommittee Hearings, Committee Hearings

May 13: *Report of House Committee.*

June 9: *House floor action, approved.*
Senate Subcommittee, Committee Hearings

June 24: *Senate Committee Report.*

June 27: *Senate floor action, approved.*
To Conference

June 30: *Report out of conference.*

July 1: *Final Congressional approval*

(This chart includes neither advanced budget planning, which begins as early as a year ahead of the President's presentation to Congress, nor the apportionment cycle which follows the above.)

Prior to the formation of this office, General Accounting Office reports came into the Defense Department through no organized channel, were sometimes used to their full advantage, but more often were used haphazardly or not at all.

With the new office, Defense gained a definite point of focus for GAO comments and suggestions on Defense operations, and was in a position to use the GAO findings to their maximum advantage in terms of Defense management.

What the Assistant Secretary of Defense (Comptroller) is to the total Defense Department, the corresponding service positions are to Army, Navy and Air Force.

Active Function

It is a fair measure of the importance of this function at service level that Congress has specified each of the services shall have what corresponds to a Comptroller at Assistant Secretary or higher level.

Unquestionably, the comptroller function is among the more active in all three services. Work that is being done in the Army is in many ways typical of the activity in Navy and Air Force.

Army is making significant strides in the field of Financial Management. Commanders and staff officers at all levels and in all geographical areas are making more and better use of financial data as a management tool.

As a result, they are demanding and getting better data quicker. This permits early recognition of trends and enables responsible individuals to make timely decisions based upon sound information.

A direct result of commanders' demands for timely data is a streamlining of accounting procedures in the Army. There is less accounting for the sake of accounting and a move toward accounting classifications which have some meaning to management.

There is more concentration on reducing administrative, overhead and other indirect costs. Every effort is being made to improve mission performance, and, at the same time, conserve resources.

Army recognizes that funds appropriated by Congress must be accounted for in terms of appropriation language. This is being done.

Also, Army is collecting data to determine the amount of resources—manpower, money and materiel—needed to perform various missions and operations.

These data are reported in a cost and performance report which shows how much it costs to perform specific operations or to sustain an activity. Commanders use these reports to appraise their own operations and make appropriate changes, then send them on to the next higher echelon.

These reports provide the basis for planners and programmers at all echelons to abandon excessively expensive operations and to assign priority among projects which must be done.

Similarly, it gives the budgeteer a better guide for developing the price tag for future operations of the Army.

Constant attention is being paid in the Army to dollar value of supply inventories, and steps are being taken to avoid overstockage. Better management data are spot-lighting situations where missions or conditions change sufficiently early to adjust supply actions to the new requirements.

This reduces the investment in excess inventory, helps prevent losses to obsolescence, and frees funds for use on essential programs.

This same program is reducing the cost of handling supplies—particularly those of small unit cost.

Most installations now operate Self-Service Supply Centers which handle commonly used supplies costing less than $5.00 a unit. These centers operate much like a super market or a drug store.

They perform minimum accounting—only enough to prevent waste and to provide a basis for replenishment. This is proving to be one of the Army's most fertile areas for reducing costs and Army is looking for more improvement in this area.

Another of the most rewarding areas being exploited is that of automatic data processing. There is concurrent progress in the state of the art of machine technology and of techniques for application.

Real Savings

As fast as the technologists develop more versatile equipment, the Army finds new and different ways to use the equipment to do a better job at less cost and with less manpower.

Real savings are to be had by integrating various accounting systems and by processing common data through a single machine center at an installation and at other related installations.

This permits maximum utilization of equipment, reduces processing and communications time, and above all, reduces chances for human error.

Army Audit Agency has recently effected a reorganization of its field activities to achieve better efficiency and greater flexibility.

There are now fourteen districts—twelve in the Continental U.S. and two overseas—which operate with minimum local administrative support. Most of the administrative function is centralized at Headquarters along with the functions of planning, programming, scheduling, coordination and report processing.

This new organization is particularly suited to the increased stress on so-called vertical and lateral audits which sometimes blanket many parts of the world.

Vertical audits are those that extend from an operating activity or installation up through succeeding higher command echelons. The lateral audits are those that extend into two or more commands at approximately the same level. Lateral audits are especially important in logistics control.

Improve the System

Army is continuously seeking means to improve the system for paying its troops. The aim is to pay each soldier promptly and accurately wherever he is and to dispatch any allotments he has authorized.

A new pay voucher has been under test for some time and has been well received. Other efforts are in process to make wider use of electrical accounting machines and punched cards to speed the process and to cut down on errors.

However, any pay system implemented by the Army will be of such a nature that the records of soldiers in combat can be maintained on a manual basis, if necessary, to assure that the soldier is paid on time.

These improvements are part of the trend to centralize automatic data processing systems where a minimum of administrative and record keeping effort will be required at the soldier's unit.

Army Command Management System is a method of directly and continuously relating program, budget, accounting, manpower and supply management system in administering non-tactical operations of the Army.

The basic concept of ACMS is that the planning and direction of missions must be integrated with systems for resource management. This system is not really new because it has been taking form for at least ten years.

However, it has begun to pay real dividends for commanders at all echelons. They now have current data concerning all their resources for making decisions and planning future operations.

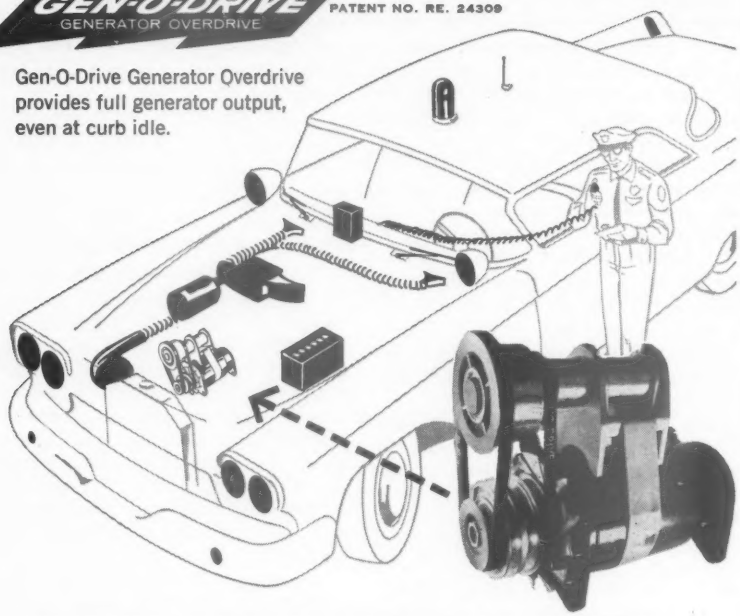
If the above outlined Army programs of financial management seem to rove far afield, it is only an indication of the totality with which finances pervade Defense operations.

And all of this is what P. K. Robinson, Deputy Assistant Secretary of the

FULL ELECTRICAL POWER
at any engine speed!

GEN-O-DRIVE®
GENERATOR OVERDRIVE
PATENT NO. RE. 24309

Gen-O-Drive Generator Overdrive provides full generator output, even at curb idle.



KEEPS BATTERIES CHARGED!

End battery-generator breakdowns. New improved-model GEN-O-DRIVE offers efficient, dependable service. Assures maximum battery charge at any speed, *even with all accessories operating!*

Slow speed, long idling periods, sirens, warning lights . . . nothing can drain your battery. GEN-O-DRIVE gives top generator output. Prevents rundown batteries, cuts maintenance and costly replacement.

Economical! GEN-O-DRIVE needs no periodic service. Lubricated for life! No battery replacement . . . extends battery life. Full guarantee.

NOW! TWO SOURCES OF POWER FROM ONE GENERATOR!

Watt Power®
AC•DC GENERATOR
Patent No. 2,939,975

WATT POWER
AC-DC GENERATORS
fit all F-L-M, D-R, Autolite systems. Provide normal DC and up to 1200 watts of 110-volt AC current!

RETURN COUPON FOR FULL DETAILS

CONSOLIDATED GENERAL PRODUCTS, INC.
P. O. Box 7425E, Houston 8, Texas

Send complete information on:
☐ Gen-O-Drive
☐ Watt Power Generators

Name_____

Address_____

City_____ State_____

Army for Financial Management refers to when he says "Army is exercising a constant effort day-by-day to do our job better. We just can't sleep at it. We have made some very substantial progress in this area. It's really a matter of the Lord helping those who help themselves."

Typical is the recent Air Force conversion to punched card accounting methods for its operations and maintenance category of the budget.

By having the field agencies of Air Force read in their O&M needs to AF headquarters in this manner, Air Force has picked up a three-fold set of benefits—speed, accuracy and flexibility.

Once the cards are in from the field, AF Headquarters can shuffle them to meet a variety of needs. They can react faster and more accurately to the many demands for information that are placed upon them.

Also, the cards can be effectively used in budgeting and financial planning. The system has worked well enough so that the Navy has expressed interest, and at their own request, received an Air Force briefing on how the system works.

In Navy, one of the more forward-looking financial management techniques is brewing in the Bureau of Naval Weapons, under the active encouragement of Navy's Comptroller operation.

This is an attempt by BuWeps to start early on the last phase of the budget cycle—that of actually spending the money. Aim is to "get everything but the signature on the contract" as early as possible.

The money managers in the Defense Department must consider many other factors.

An indication of some of these other factors is offered by Rep. Jamie L. Whitten, a member of the House Defense Appropriation Subcommittee:

"Whatever our military needs are, we must meet them. But I think any man who gives even a little attention to economics will realize, other than some benefits perhaps from research, that that which you have to spend on defense, which is not producing consumer goods, is of its very nature inflationary.

"That in turn leads to the belief that any needless spending, for which we do not get real defense, is one of the basic causes of the inflation with which we are faced in this country . . ."

This is the tight-rope that the military comptroller must walk. In many respects, it is a situation in which the Comptroller himself can't win. ■

The Single Manager Theory

What Single Management Promises

THE MANAGEMENT IDEA that rakes in savings to the tune of over a third of a billion-dollars is certainly the exception, and not the rule.

And the management idea that can do this, while providing side benefits—speed, efficiency, flexibility—approaches the phenomenal.

Even discounting future potential, these are the results Single Management has delivered to military supply management. And as single managerships increase, the results can only be more impressive.

An apt summation of the progress made comes from one Defense Department official who works closely with the eight single managers:

"When we first started, we had to break our backs to get together figures to justify what we were doing. It's to the point now where our so-called 'justification figures' are so overwhelming it's embarrassing. I look forward to when we won't have to go around to everybody explaining that the system really works."

When this happens, there will be no question that Single Management has reached maturity. But in many ways it's like waiting for a rookie major leaguer who has hit 65 home runs to mature as a ball player—for anyone who wants to take an honest look at it, the idea is already here, and here to stay.

Given this climate, it is not surprising that the two major areas of activity in the general Single Manager category are no longer pioneering in the sense they used to be.

Basically these two areas of activity are (1) expansion of the existing techniques to other profitable areas, and (2) a full-fledged attempt to set up standard operating procedures among the several single managers, pointing the way to what a single manager is and should be.

The Point

The second of these points is probably the most important at the present time. This is so simply because any new Single Manager recommended or named in the future will operate under the ground rules evolved in this project.

Genesis of the single manager standardization project—called Single Manager Systems Design Project is fairly obvious.

First four Single Managers were chosen primarily because the services named had heavy interests in the areas involved, and more than a little experience with the supplies involved (Medical, Subsistence, Clothing and POL).

Going one step further, the services quite naturally tended to project their own systems into the single manager job. Simply, this meant that instead of changing its system for handling Clothing, Army enlarged the system it had to encompass the needs of Navy and the Air Force. And the finished system bore marked resemblance to the Quartermaster Corps, on an inter-service basis.

(This with no disparagement to the organizations concerned. Comments one Pentagon procurement manager on the Army-run Single Manager for Subsistence: "Considering military and industry alike, I would have no hesitation in saying that this is probably one of the finest, most efficient and most responsive procurement activities of its kind in the world.")

By the same token, Navy, in taking over responsibilities for POL used Bureau of Supplies and Accounts as its foundation, simply read in Air Force and Army requirements to make the Single Manager an accomplished fact.

The obvious outcome: Air Force, for instance, found itself having to get its uniform trousers one way, and meet an entirely different set of specifications to requisition the gasoline for its staff cars.

"Slightly Different"

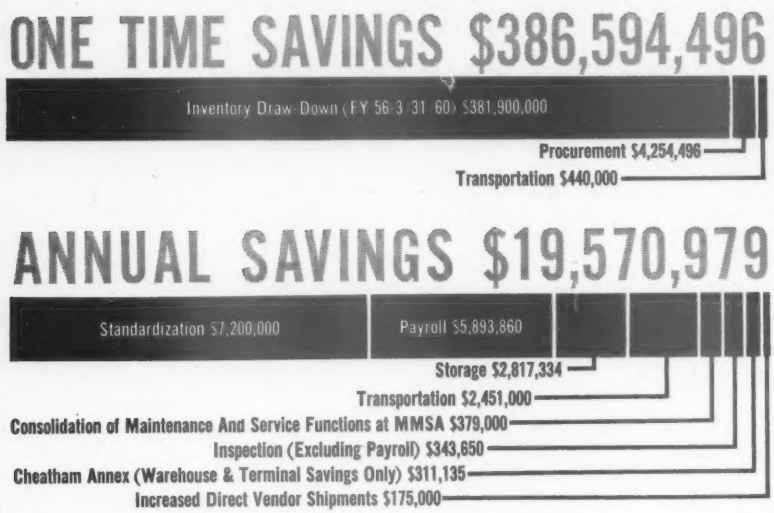
The extreme example of this—as cited in the study project statement—is a hypothetical Marine Corps installation having to deal with a dozen different supply systems—Army, Navy, Air Force, and eight separate single managers, along with the Marine Corps supply system. Added the statement, each of these systems used "slightly, or in some cases substantially different procedures."

Besides this, it is fairly easy to imagine the chaos that could develop under wartime conditions, when unavoidable pressure would push the system to its full extreme.

Perhaps a more compelling piece of logic for the Design Project lies with the present state of Single Management in the Defense Department. Says one Army officer, "It's hard for me to see the Single Manager idea being extended much beyond those areas under study—Electric and Electronics, specifically."

(It would probably be more accurate to say "single management in its present form." While the precise form of Single Manager now in existence has limits, the idea of central buying and supply responsibility is one that can be used in other ways. Case in point: Air Force serving as single purchase agent for Army aricraft and helicopters.)

This means that single managership



is moving into a relatively static position where an attempt to set up standard procedures could be based on a predictable situation.

For these reasons, Department of Defense is shooting for a year-end deadline on the Systems Design Project. (A date, incidentally, that coincides with the deadline on the Electronics/Electric study.)

Following recommendations set forth in the Armed Forces Supply Support Center report on General Supplies, the design study was set up in March of this year.

Comments one Defense executive: "This isn't a study just to recommend further study. We're after some concrete results. If any of our deadlines slip, it will be because it is absolutely unavoidable—and somebody is going to need an explanation."

The four areas where the design project will work are (1) Distribution, (2) Field Supply Procedures, (3) Inventory Control Procedures, and (4) Funding and Accounting.

In each of these four areas, the study group will look for potential headaches —weak spots that could break down or collapse into bottlenecks under stress.

Some Answers

No less important, the study will try to come up with a few answers in terms of operating efficiencies for the less-than hot-war situation that Defense supply systems currently support.

By the book, general project objectives are in two categories: (1) To develop a single integrated material distribution system, to the extent practicable, for all Single Manager and potential Single Manager commodities which will most efficiently meet needs of the military services.

And (2) to develop uniform operating procedures, to the extent practicable, for all Single Manager Agencies to include requisitioning of material, stock status reporting, depot supply procedures, simplified funding and accounting procedures, organizational patterns and related operations.

In other words, the objectives are "the most modern management methods. Many improvements have already been instituted. It is essential that further improvements be initiated immediately to insure that the maximum benefit is obtained from the resources available and that the supply system is as responsive as possible to emergency needs."

On the four areas under study, a rundown would look like this:

(1) Distribution System—had the earliest start, is working against the tightest deadline, most likely to come up with results first.

(2) Field Supply Procedures—one of the most important phases, and the one which will have to work most closely with combat support. What's needed: a system of priorities, and standardized requisitioning, processing, accountability and information dissemination procedures.

(3) Inventory Control Procedures—perhaps most basic of the areas under study. Success here will tend to have heavy implications on Field Supply Procedures. The aims: (a) uniform terms and definitions, (b) uniform treatment of like objects, and (c) a consistent and compatible series of regulations covering Single Manager operations.

(4) Budgeting, Funding and Account—because of the background needed, this phase will probably be the last to be wrapped up. What the study will look for: simplified budgeting, funding and accounting procedures compatible with appropriate supply management procedures, to most effectively meet Military Service needs and to be susceptible in integration with the budgeting, funding and accounting of the military services.

The idea in these four parts of the study is not—and could not be—to come up with an unbending Procrustean format for all operations involved. The basic difference in the commodities handled would immediately rule this out.

Along this line, it is worth quoting the project statement again: "To suppose that all commodities can be furnished to all customer through one stereotyped . . . system by means of identical procedures is unrealistic . . . Certain unique procedural and systematic features are directly associated with a peculiarity of a commodity or a specialized need of the supported forces.

"Notwithstanding this recognition of the necessity for justifiable differences, a much greater uniformity and compatibility among systems is desirable and clearly obtainable. The size and complexity of the supply system do not rule out the opportunity for this reform, but rather emphasize the need for it."

The Goals

The goals of the study are worthwhile, and the timing is logical. Most likely result is a better system of doing business. Besides the stated goals of the study, it is probable—as is true in any thorough management analysis—that side benefits in terms of operating efficiencies will turn up.

Considering the results that could be obtained from the Single Manager System Design Project, it isn't surprising that Defense Department has assigned some of its top level supply managers to the job (see chart). Working under direction and policy guidance from the Armed Forces Supply Support Council is a staff directorate, composed of members from all four services and the Armed Forces Supply Support Center. Coordination, integration, collation and supervision is the job of this group.

A functional staff, under the Directorate, handles research, analysis, development and system design. Acting in an advisory capacity to the entire study is a panel of six currently designated Executive Directors of existing Single Manager operations (Subsistence, Clothing & Textiles, Medical Supplies, POL, Industrial Supplies and General Supplies).

Besides the question of how Single Managers should operate, there is the still unanswered question on how

much of military supply should be managed in this way, and how soon how much of what should be incorporated under Single Management.

This is the second major area of current activity relating to Single Management, and the one which will most likely come up with the most newsworthy results.

Working against the same December deadline, Armed Forces Supply Support Center is currently taking a long, close look at the Electrical/Electronics supply area, with at least one eye on the possibility of its being singly managed.

Aim of the study is to come up with the best possible way of handling this category of supplies. About the only sure thing at this early stage of the game is that AFSSC won't, in their own words, come up with facts that "lead to a straight *status quo* report."

Bearing this in mind, it is worth looking at the history of Single Management, and the way it has grown to be a major factor in defense supply management.

Logically, Single Management had relatively uncomplicated beginnings, working in areas where most of the work was done by a single service to start with, and in commodity areas where there was little in the way of doubt on what should be included—Subsistence, Clothing and Textiles, and Medical Supplies. (Only possible exception would be POL, and this only in terms of who had been managing it in the past.)

But when designations were made for General and Industrial Supplies, two new factors were introduced into the Single Manager field of work.

First, the area in question was no longer clear cut. By its very name, General Supplies sets up a category that could conceivably include just about anything. Industrial Supplies is a bit more limiting, but the limitation is a fine line to draw.

As a result, these two Single Managers were created with a new concept built in. The concept: open-end definition. What it means: no clear definition was set for these two areas, and new commodity assignments can be made as necessary.

Second, as was true with POL, the two new designations no longer dealt with clear cut lines of demarcation, as far as service interest. In hand tools or awnings, it would be hard to say which service had the predominant interest. As a result, the decision was a tougher one to make, and one which served to broaden the scope of the entire single manager idea.

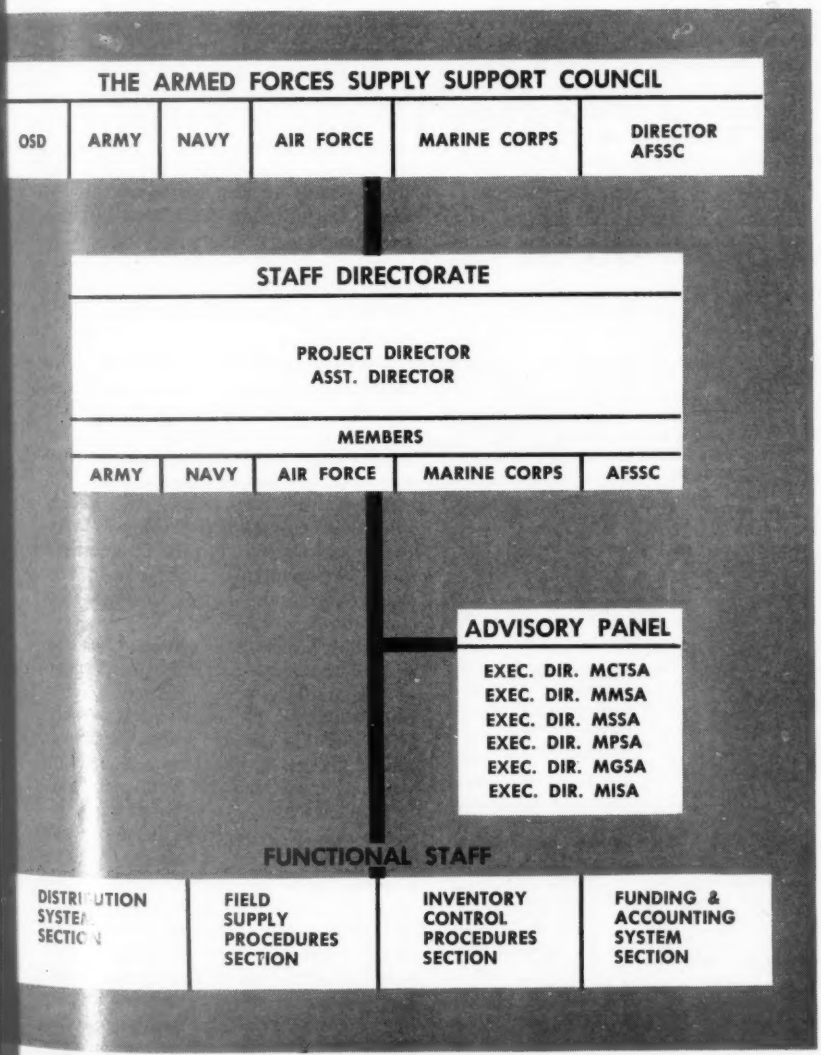
In the two most recent designations, what was perhaps an even more important step was taken. In naming Single Managers for Automotive and Construction Supplies, Defense Department moved definitely into the area of operations, as opposed to support.

Now it wasn't a matter of being six months late with a dozen pencils. For the want of a bulldozer blade, a convoy under fire could be stymied by a shell hole in the road—and reduced to rubble.

The trends would all seem to point to electrical/electronics as a logical area for—at least partially—single management. With experience in operational equipment, indeterminate commodity areas, and heavy cross-service interest, it seems quite likely that the single manager concept is mature enough to handle the job.

And from that point, the next step would be a matter of naming the service for the job.

Coordinating Studies . . .



The Reasons

If enthusiasm were the sole criteria, Air Force would be as good as named.

There are a number of reasons why Air Force feels it is the most logical choice for Single Manager in the E/E area. But perhaps the most important of these is simply that the Air Force does not yet have its first commodity Single Management assignment.

Going one step further, the Air Force faced the following in the not-too-gentle hands of the Holifield Subcommittee on Government Operations: "The Subcommittee's concern goes to the fact that the Air Force, with the second largest manpower total in any of the services has been least interested in common supply activities and has resisted the single manager and related supply programs, except when acceptance could result in increased power, prestige, and resources."

The Air Force Argument . . .

These strong words, quite understandably, stirred up a fairly strong reaction within the Air Force. Basically, the AF argument goes this way:

"When we were first set up as a single service, we drew heavily on the other services for many of our supply needs—all of them that we could handle that way. The aim was then to avoid duplication, and we were set up with a skin-and-bones supply operation of our own—only what we needed for our own specialized weapons.

"Look at the areas that have come up for consideration in the past—with the exception of POL, and industrial supplies, you could almost say categorically that we haven't had either the interest or the organization to take over the jobs in question.

"In perhaps what is a more important problem area, our ideas on what's going to be needed in case of war are somewhat different from the other services. Where they work in terms of mobilization, we talk of 'war readiness'—the go-with-what-you've-got approach.

"This one has put us in a funny position—it would be understandably hard for us to go along with any system that wouldn't meet our requirements as we see them. And in the past, we've legitimately questioned the ability of single management to deliver in some cases. For this, we've been accused of foot-dragging.

"At the present (the AF line of argument runs), most of our prior objections are no longer problems. Therefore, we're ready to go."

In this context, Air Force maintains that its own system is fully responsive to its needs, and that its system could be easily expanded to accommodate the other services. Air Force maintains further that its system has taken in the neighborhood of ten years to build, and to achieve the same degree of responsiveness in the other services would take a good percentage of the same time.

Given what appears to be a fairly cogent argument, and—more important—heavy Congressional pressure to get in line, Air Force, at this writing seems an odds-on favorite for the E/E Single Managership, if such designation is made.

Summing up, the concluding paragraphs of the Holifield report on Military Supply Management seem to offer a fair and concise picture of the Single Manager picture as it appears today:

"The specific gains in economy and efficiency achieved by the single manager program, and its limitations as well, must be clearly understood . . . The subcommittee has attempted to raise a number of issues which look beyond the presently constituted single manager programs. The Department of Defense has responded by emphasizing its general and evolutionary approach to supply management. It has noted its reductions in total inventories, its expanded study of economic order quantities, its moves towards cross-servicing storage space with civilian agencies, and its material management program, comprised of some 16 projects which cut across single manager and service systems. It has weighed the difficulties of commodity organization against the asserted service control of combat items.

The Wrap-up

"Even so, there are many problems as yet untouched. The whole concept of mobilization reserves need re-examination. The supply implications of the military strategies must be discussed and hammered out, not merely in a single annual guidance from the Joint Chiefs or the Secretary of Defense, but in individual item analyses by inventory managers and users. Concrete usage and demand data must be gathered and fed into the study of economic order quantities and stockage . . .

"Nuclear warheads, intercontinental ballistic missiles, supersonic planes and space vehicles and systems are the new technologies of war. That these technologies will effect a radical transformation of the conventional military structure in the years immediately ahead, we cannot doubt. New weapon technologies will require new command organizations, and these in turn will require new logistics support organizations."

While Single Management is only one of the many tools at the disposal of the military supply manager, it is one which has been—so far—used wisely and well. It is one that has amply proven its effectiveness, and one that has more than paid its own way.

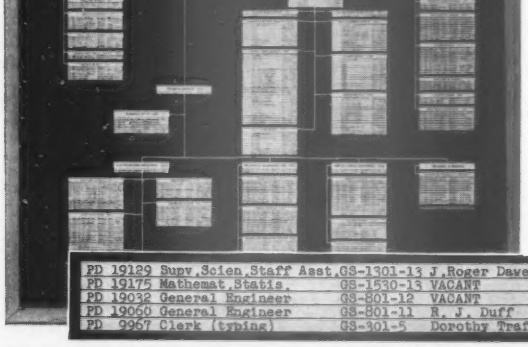
In short, it is a proven way of doing business. From here, the job will be to polish the techniques and to expand on what's been done. With over half of the supply line items in the defense establishment either under single management or under consideration for such a move, this management method can only be called one of the most significant and far-reaching in the Department of Defense. ■

STOP COSTLY RE-DRAFTING OF ORGANIZATION CHARTS

THE COFFIELD EVERLASTING *Interchangeable* ORGANIZATION AND MANNING CHART

EASY TO CHANGE

A typist, a typewriter and furnished perforated strips are all you need to keep your chart up to date!



PD 19129	Supv.Scien.Staff Asst.	GS-1301-13	J.Roger Dawes
PD 19175	Mathemat.Statis.	GS-1530-13	VACANT
PD 19032	General Engineer	GS-801-12	VACANT
PD 19060	General Engineer	GS-801-11	R. J. Duff
PD 9957	Clerk (typing)	GS-301-5	Dorothy Traffalis

- Sizes to Fit Any Organization Structure
- Photographs for Sharp Prints
- Make Fast Spot Changes
- All Parts Are Movable and Re-usable
- In Government Service Everywhere

ENLARGEMENT OF STRIPS SHOWN IN CHART. Each strip. Actual size 4¼" x 8". This chart permits listing of all personnel by job classification, rating and name, if desired.

Write for free Illustrated Brochure AF-11 or Consult our GSA Federal Supply Service Contract GS-00S-31608 Group 74—Parts 3 and 2—Item No. 50-63. Code 79.

MANAGEMENT CONTROL CHARTS CO.
1713 N. WELLS ST. • CHICAGO 14, ILL.

TITAN Construction in Colorado

Properties and Installations:

Where New Problems Are Cropping Up

TAKEN AT FACE VALUE, there are few areas of Defense Operations apparently more run-of-the-mill than Properties and Installations.

But such an opinion is necessarily formed before a careful look has been taken at what is being done in this area in terms of management, what is involved in terms of property, and the king-sized headaches that the people working in this area contend with.

A partial listing would have to include:

- Almost without question the most difficult set of regulations with Congress on practically any legislation proposed in this area.
- The recently discovered fact that ground facilities in a missile age no longer support a weapon system—they are a part of it.
- In family housing, a set of circumstances that ties P&I operations to retention rates in fantastically high proportion.
- In real estate, the urgent need for more space for missile operations, in a nation where land is at a premium, and becoming more crowded all of the time.

There are two basic reasons that Defense Department's Properties and Installations people have a tougher-than-usual time on the Hill.

First, and the one which would be hardest to change, is the situation that faces military construction managers. In this area, there is a matter of having to face two sets of hearings each year—one before the Armed Services Committees for authorization, and one before the Appropriations Committees.

The second problem area—and at least part of the reason for the first—is that many of the items that come up in this particular area have strong political implications.

The basic problem: P&I deals generally with people's property. There is probably nothing that sends an irate citizen to his Congressman faster than what looks like a chance that the Federal Government is going to move him out of his house.

The Pressures

Nor is this the only problem. In some cases, the entire political resources of a given town will be mobilized to prevent a given service from closing down an installation, even though it would mean property returned to the local tax rolls.

On the other side of the coin, there are situations such as the one currently existing in Hawaii. Here, Army happens to own a good sized piece of real estate smack in the middle of Waikiki Beach.

If it were on the local market, it would sell for hundreds of dollars a square foot. The demand for it is understandably high, and there is heavy pressure for Army to move out.

The comment of one Pentagon executive indicative of a number of similar situations: "It will be years before we get this one straightened out. Most of the usual political problems in this case are compounded by a lack of clarity in the Hawaiian Statehood Act where it pertains to this."

Unquestionably, it is hard for the P&I people to move fast in this area, and in almost anything they try to do, there turns out to be something in the way of added complication.

Although Congress can provide the most vociferous group of critics—as individual Congressmen or as a group—this is by no means the only group of people with an interest in the P&I area. State governments, Chambers of Commerce, Mayors, Aldermen and country politicians would offer the beginnings of a more complete list.

How do you organize to handle this sort of thing? Says one frequently harassed executive, "Somebody once said that 'It is the job of the military staff to make the necessary military determinations, without political considerations. In the final analysis, it falls to the Secretary to blend in the fine wine of politics.'"

In the billion-dollar-a-year job of military construction, there is a new

factor that must be read into the planning and programming task:

With the advent of the missile age, military construction can no longer be considered in isolation. It has become a part of the actual deterrent weapon systems that form so large a part of the nation's arsenal.

One military manager elaborates:

"In the old days, when we were building airfields, it was basically a matter of laying the runways and forgetting about it. Once the runways were down, most of the airplanes we had could fly away from them. Even when we moved to jets, it was a matter of extending the runways we had and building bigger hangars.

"But the missile sites we build today are a part of the weapons themselves. They have to be built with tremendous accuracy, and our construction people face the same time problems as the weapons developers. It isn't a matter of just pouring concrete."

Before the intercontinental missile was introduced into the operational military inventory, the military civil engineer was practically never called on to build anything that he hadn't built at least once in his career. Even if that weren't the case, he could almost invariably find somebody else who had built one of whatever it was.

Endurance, size of the paved area, number of windows in the building—only minor variations appeared with each new project.

With the missiles, the conditions changed. Not only were new specifications needed to begin with, but nobody was really sure of what was needed—engineering changes became the rule rather than the exception. And without question, what was being built had never been built before.

This was coupled with a sense of urgency that was in many ways as new as the work that had to be done.

Further, points out one Pentagon executive, "your eyes would bulge at the complexity at these sites. Besides the design changes—which are expensive, upsetting and troublesome—we were in a brand new area of construction. And on top of all of this, we were faced with a reliability requirement that really hadn't existed in the past. If, for instance, an air conditioner breaks down, it can mean that the missile can't get off the ground if it has to."

In the construction areas, then, the basic problems are a new area of operations, a need for reliability new to the trade, and a complexity of work that had no precedent.

Summing it up: "We just can't handle our job on the old rough and ready basis any more. The day of the blacksmith's inch is gone."

To meet these challenges, Defense has moved in a hurry, and in several directions. Among the remedies:

—A thorough briefing for union officials involved in the $15-billion missile site construction program. Following the briefing, a hair-down session on what problems both Defense and labor had, how they could be ironed out.

—A similar meeting with contractors, with equally salutory results. Summing up the results of this meeting, Defense Secretary Thomas Gates was able to report to the Cabinet that:

"As a result of our meeting of July 29, many suggestions were submitted by the contractors on ways to speed up the site activation program at missile bases. These suggestions were in the areas of design, construction management, contracting procedures and equipment procurement.

"Effects of the contractors' suggestions were the establishment of 'on site' systems to eliminate multiple inspections of the work, to offer prompt review of shop drawings, to assure monthly payments to contractors for additional work resulting from change orders, and to establish procedures for pre-qualifying construction contractors to competitively bid on Ballistic Missile Construction projects."

In family housing, P&I is probably dealing with a basic challenge that is as important as missile site activation, and in some ways more sensitive in its effect on the status of U.S. military forces.

In a word, retention. How well a man's family lives is one of the most significant factors in how long he stays in the service. This plainly goes back to the family housing that he can obtain.

From a positive point of view, a brochure issued by Strategic Air Command points out that "with their wives and children in comfortable, pleasant homes, the morale of our men can be high. The combination of adequate pay and a decent place to live may reasonably be expected to induce our personnel to remain in the service. Result—a stable, professional force."

Through such measures as Wherry and Capehart housing (see chart), a considerable amount of progress has been made along these lines within the United States.

On the real estate scene, it is again the missile age that is creating many of the problems that the military must deal with. In the old days, a gunnery range could be easily measured in acres. But with such weapon systems as Honest John, Nike-Zeus, Atlas, Polaris and Pershing, the ranges must be ticked off in hundreds of miles.

A few examples from the Army show the point. At Fort Benning, Ga., a local road running between two sections of the post has to be closed down during Honest John firings.

At Fort Sill, Okla., more space is desperately needed for missile training, but can't be had. To get the land that is needed would mean moving literally hundreds of people off their land. Army's first try at getting this land resulted in Congressional hearings, and a negative decision.

In one rather weird compromise, Army managed to get itself the range room it needed for Zeus testing. This is how.

Army wanted a strip of land that was fairly narrow, something under 50 miles long, as an extension of present facilities. On the land in question lived a dozen or so families, widely scattered, and not really in the line of fire. Only a hundred people were affected by the Army's plans.

Status of Capehart Housing Program As of June 30, 1960

Installation	Total Units*	HOUSING UNITS Completed	Under Constr.	Bidder Accepted	In Process*
Army	36,351	20,677	5,777	367	9,530
Navy	19,806	3,506	7,780	568	7,952
Air Force	59,142	36,422	15,144	1,764	5,812
GRAND TOTAL	115,299	60,605	28,701	2,699	23,294

* Includes about 4,467 units which will not be built because of a proviso Section 803(a) of the National Housing Act.

The Answers

The solution: a lease arrangement under which landholders rent their land to the Army for 24 hours at a stretch, are evacuated when Army wants to fire a test shot.

One result of the overall space problem: operational air defense crews, to get in one actual firing a year, have to travel from all over the country to Fort Bliss, Tex., where facilities exist. One ray of hope: Alaska, which may offer space at least for nearby crews to practice.

The foregoing are probably the most

important factors bearing on the Properties and Installations job. But within this framework, each of the three services are working to achieve most effective use of the facilities that they own.

While all of the services are working actively along these lines, it is by and large fair to cite a number of Navy programs that are perhaps indicative of the type of work that is involved.

Probably the most far reaching of the current Navy property management programs goes under the name of MAMP—Multiple Activities Master Plan. Explains one Navy executive, "this is really nothing more than a codification of common sense."

By way of background, the MAMP program is an outgrowth of a situation that faces all of the services. During World War II, military facilities mushroomed to fantastic size, to meet the need for greatly and rapidly expanding forces.

Obviously, the result was something less than ideal management. Under wartime pressures, there was little time for thorough analysis of each and every way a requirement could be filled.

As a result, if a building was needed it was usually built as fast as possible, with no consideration for the possibility of a thoroughly satisfactory substitute standing idle across the street.

In the World War II Navy this was further complicated by the fact that each of the Bureaus handled its own properties. While BuShips and BuAer might be sharing the same base, this was no guarantee that either knew what the other was doing.

By war's end, it was plain that the Navy's shore establishment had "grown like Topsy," and that there was ample room for improvement.

Many improvements were made, but progress was halted with the beginning of the Korean conflict, and much of the same thing took place all over again.

But recently, Navy—through MAMP—has taken what should prove to be a major step in the right direction. Instead of having the Bureaus control the buildings that might be in question, the job has been laid in the lap of the base commander.

Obviously, this means greater vertical control. Buildings that used to be BuWeps' buildings or BuShips' buildings are now simply the Navy's buildings, with the resultant central control.

MAMP boils down to a thorough analysis of assets on hand. It is currently being tried out at both San Diego and Norfolk. In Norfolk, Navy is handling the survey in-house. In San Diego, a firm of outside consultants is doing the job.

Plainly, the payoff for Navy can be great. But as one executive points out,

NORTHERN ORDNANCE INCORPORATED

Subsidiary of
NORTHERN PUMP COMPANY
Minneapolis 21, Minnesota

Guided Missile Launching Systems

Prime Supplier to
BUREAU OF NAVAL WEAPONS, DEPARTMENT OF THE NAVY

acme visible rotaries

. . . spin nearly a quarter-million 5x3 consumer credit cards to users fingertips—at Broad Street Trust Company of Philadelphia. Reference data moves . . . but the workers do not. Result: Faster customer service. Employee fatigue reduced. Precious floor space freed. Send coupon to see how Acme Visible Rotaries soon pay for themselves!

ACME VISIBLE

ACME VISIBLE RECORDS, INC.
8011 West Allview Drive, Crozet, Virginia

Please send information showing examples of many types and sizes of power and manual Rotaries now used by firms in many fields.

NAME_____TITLE_____
COMPANY_____
ADDRESS_____
CITY_____ZONE_____STATE_____

"there is considerable inertia to overcome. A program like this takes a lot of selling, and most of what we eventually do will probably turn out to be compromise and balance of many factors."

For its construction and planning, Navy is also moving to a more comprehensive method of attack, using a five-year construction plan as the ground work.

Centering construction planning responsibility under Chief of Naval Operations the idea is to "work from JCS planning forward," to translate operational requirements more realistically into the mundane backups that are necessary to get the job done.

In the past, it was standard for each station within the Navy to draw up its own construction requirements.

The obvious result: generally unrealistic totals, a tremendous backlog of work at the top, and a laborious job of pruning each year to put together a realistic and reasonable construction program.

Differences

The new system should do much to purify this area of Navy operations. Stress will be on quality rather than quantity, and with a five-year plan as a vehicle, many of the impurities that had appeared in the past should be cut out before they are even a part of the program.

In one other move towards consolidation, Navy is expanding a technique that proved itself successful at Newport, R.I. There, Navy consolidated its maintenance work in a public works center, with an eye to cutting people and costs.

The idea worked, and in the future will be applied at Pearl Harbor, Norfolk, Guantanamo Bay, Subic Bay and Guam. Again, the basic aim is to cut across the lines of what one Navy man calls "Bureau provincialism."

Even given the basic organizational differences between the three services, the line-up for Properties and Installations is unusual for its amount of difference for each of the services.

In the Army, the Director of Installations reports to the Deputy Chief of Logistics. Corps of Engineers, Army's operating agency in this area, also reports to DCS/Log.

In Navy's case, there is an Executive Assistant for Facilities to the Assistant Secretary of the Navy for Material. Also, there is a Facilities Branch under Office of Naval Material. Operating agency is Bureau of Yards and Docks.

In Air Force, top man in the area is a Special Assistant for Installations, ranking only a cut below the Assistant Secretaries, and working more or less independent of them. Under the Deputy Chief of the Air Staff for Operations, there is a Director of Civil Engineering, with Air Materiel Command having general operating responsibilities.

No String Savers

Actually, differences in the Army and Navy organizations are generally dictated by overall differences in the services themselves. In both cases, the general properties and installations function falls to the material area of the organization.

The most radical departure is that of the Air Force, with the military responsibilities falling under DCS/Ops. As is usually the case, there is a reason for the difference.

Beyond fairly simple maintenance and construction work (base-level, as a rule of thumb), the Air Force has virtually no capability for construction. As a result, some 85% of the work that the Air Force has in this area is farmed out to the Army, with another smaller slice going to the Navy.

Thus, the work that Air Force does is almost entirely a matter of drawing up requirements to be filled by the other services. Because there isn't the need to fill their own requirements, it is logical that the responsibility should fall to the operations people.

In spite of these organizational differences, there is actually very little in the way of trouble as far as the services working together.

Regarding the recent missile site activation lag, both Army and Air Force were willing to admit that from an inter-service standpoint that they had "excellent working relationships."

In point of fact, the speed with out would seem to back this up.

In a more specific case, Navy found itself with a shipment of supplies on its hands and no storage space. At a which the situation was straightened nearby location, Air Force had the space Navy needed.

This was at about 3:30 on a Friday afternoon. A couple of phone calls and 90 minutes later, Navy had the use of the AF space, was able to move its supplies in on Saturday morning.

Commenting on this situation, one Navy executive says, "in facilities, we don't have the clear points of contact that exist in other areas of the Defense Department. As a result, much of the interservicing that we have we do on an *ad hoc* basis. I think we have been able to work well within this framework."

Formally or informally, Defense Department must presently manage some $26-billion worth of properties and installations.

As support operators, the managers in this area feel the budget pinch that runs throughout Defense operations. Says one executive, "We operate on the theory that all land should be used to its best advantage, in or out of the services. This means that if it means more to the local economy than it does to us, we should, if at all possible let them have it.

"We simply can't be string savers—we can't hold onto land or buildings or anything else just because we might need it in the future."

(Following this theory, Navy last year—for the first time since the end of Korea—disposed of more land than it bought.)

Besides this kind of management pressure, there is the ever-present political harassment, and the problem of the work becoming much more closely aligned with the actual operations of the combat forces in the services.

All in all, the job is tremendous. It is also one that is complicated by an odd sort of factor.

"The facilities that we build are virtual monuments to any mistakes that we make. Take the P6M. All of the airplanes themselves have been broken up for scrap. But the seaport that we built for them still stands." ■

How To Get Things Done Better And Faster

BOARDMASTER VISUAL CONTROL

☆ Gives Graphic Picture—Saves Time, Saves Money, Prevents Errors
☆ Simple to operate—Type or Write on Cards, Snap in Grooves
☆ Ideal for Production, Traffic, Inventory Scheduling, Sales, Etc.
☆ Made of Metal. Compact and Attractive. Over 500,000 in Use

Full price $49.50 with cards

FREE 24-PAGE BOOKLET NO. AM-20 Without Obligation

Write for Your Copy Today
GRAPHIC SYSTEMS
Yanceyville, North Carolina

Where Answers Come Hard

Handling the Personnel Headache

IT WOULD BE HARD TO IMAGINE anything more obvious than the importance of the military personnel situation to the overall effectiveness of the total defense posture of the nation.

And it would also be hard to imagine an area of military management where the job is tougher, where the men in charge have to walk on thinner ice for more of the time.

What it boils down to was summed up about a hundred years ago by Abraham Lincoln: To paraphrase, "You can keep all of the people happy some of the time, and some of the people happy all of the time, but you can't keep all of the people happy all of the time."

And if this weren't enough, the military personnel manager has to deal with factors that would almost certainly drive the civilian personnel pusher to an asylum in a few short months.

For instance: the military personnel manager must predict his personnel needs fully three months in advance, dealing with such vague factors as reenlistment, the state of world affairs and a tremendously narrow margin of error, by virtue of Congressionally imposed manpower ceilings.

For instance: he must deal with industry competition for the men he has trained and compete on what in many ways is a lack of some of the normal benefits—such as stable home life, [competitive salary scales] or freedom of personal action.

For instance: he deals with a situation in which the very training he gives a man is that man's best reason for going elsewhere to look for work.

All of this work must be done in an environment where tight manpower ceilings dictate a quality force—there simply isn't room for a man who can't carry his weight.

Further, the whole situation is complicated by one factor that probably exists in no other brand of personnel management.

The military manpower structure is subject to just about every whim of international affairs in a period when it is hard to find any semblance of stability for more than two weeks at a time.

When, for instance, Lebanon blew up, planned reductions in military manpower were immediately slowed. But later in the year the military found itself facing a real toboggan in manpower to fulfill its reduction plans.

With the draftee providing, at least in Army's case, the variable factor in any manning emergency, and with the draftee being most likely to get out at the end of his two years, the whole situation is further complicated.

In this particular area, probably the most spectacular situation is the carryover of World War II officers who will be coming up for retirement during the next few years.

The "Hump"

Collectively nicknamed the "Hump," these officers, by weight of their numbers, created a management problem of such propositions that in the Navy and Air Force, Congressional relief was needed.

What happened was this. The heavy influx of officers to support the World War II effort provided a great number of people with approximately the same amount of time in service.

Since those who stayed in were looking for twenty-year retirement benefits, all were scheduled to get out of the service at about the same time. The result was something like an ostrich swallowing a grapefruit whole. The entire system bulged.

As a result, the past few years saw a tremendously lopsided officer personnel structure in the services, with a heavy preponderance of active officers in the Major/Lt. Cdr. to Capt./-Colonel ranks.

This meant a serious bottleneck in promotions from company to field grade for the younger officers coming into the service after World War II, and down to the present.

And so the already tough problem of inducing the best manpower material to make a career of the military became even harder.

Army was probably least effected by the Hump. Air Force was able to postpone their problem with temporary Congressional increases in some grades. Navy was able to handle the problem only with an appeal to Congress which was answered, to be able to retire a number of its officers early.

With both Navy and Air Force working with 100% volunteer forces and the Army draft call down to well under 10,000 a month, it is not surprising that the main emphasis in present military personnel management is on the quality of the men who come into the service.

The obvious corollary to this is retention—the ability of the services to keep who they want after they get them.

Training is without question one of the most important factors in the military's getting the men it wants to its operating units. Given the raw material, it is the job of the Defense personnel manager to set up a training system that will meet service needs, providing the best possible officer and men.

In this area, the recent past has seen major overhauls of the educational systems for officers coming into all four services, and in all cases it has been a matter of liberalizing the curricula that the prospective military officer must undergo.

Spearheading this movement was the brand-new Air Force academy, working with a clean slate on the courses it would teach, and being able to set them up in line with the problems that the officer-graduates would have to face.

Traditionally, the military man had

Congress in the Act . . .

P. L. 86-616 *Amends law relating to the elimination of certain Regular officers of the Army and Air Force.*

P. L. 86-559 *Makes omnibus amendments to ROPA; includes provisions affecting the promotion to general officer grades in the Reserve.*

P. L. 86-597 *Extends for four years the authority for ROTC flight training.*

P. L. 86-603 *Eliminates the need for inactive Reserves to be given quadrennial physical examinations.*

P. L. 86-563 *Extends for two years the authority for free importation of household and personal effects of personnel returning from overseas.*

P. L. 86-593 *Establishes "Air Force Cross" and "Airman's Medal."*

P. L. 86-582 *Authorizes the award of certain medals within two years after a determination by the Secretary concerned that because of loss or inadvertence the recommendation was not processed.*

P. L. 86-597 *Entitles certain Reserves to select and travel to a home of selection at Government expense within one year after discharge, separation, or retirement.*

P. L. 86-585 *Grants reemployment rights to certain civilian employees assigned overseas.*

P. L. 86-641 *Authorizes payment of final accounts of deceased members without GAO settlement.*

***THIS AIR FORCE** list gives a good indication on how much of the military personnel problem has to be run through Congress. Between this, and the internal problems, the job is prodigious.*

been an engineer, following the principles set by Sylvanus Thayer more than a hundred years ago when he set up the curricula and training program at West Point U.S. Military Academy. Navy followed suit, and except to bring the engineering curricula up to date, little was done until recently to change the basic content of the courses, or for that matter, to inject fresh blood into the overall officer education program.

But when Air Force began work on its academy, it reasoned something like this: "When these men graduate, they will be sent all over the world as representatives of the United States. Besides flying airplanes, they will spend much of their time working and living with civilians, both American and foreign.

"As effective representatives of their services, it will be necessary for them to know something besides how to fly, or how to design missiles. A good solid background in the liberal arts—political science, history, economics—is certainly not going to do any harm, and will probably turn out a much more well-rounded officer."

One measure of the soundness of the reasoning is the alacrity with which it was picked up by both West Point and Annapolis: both of these academies are now working with more liberal curricula.

Aside from the service academies, probably the most significant input of officer material for all four services is through the various Reserve Officer Training Corps arrangements around the nation's colleges.

In the past few years, Army particularly, and Air Force to some extent have found themselves facing a serious problem in what had in the past been an excellent source of new officers.

The college student simply wasn't as interested in ROTC as he had apparently been in the past. Not only was he failing to go on into the Advanced Program (the last two years leading to commission), but in many cases, he was actively working against having to attend the first two years.

And while the first two years are mandatory at many so-called Land Grant colleges, at these and other schools, there was growing faculty support for the abolition of required military training in the form of ROTC.

Once again, the answer was a long look at traditions that had gotten a bit dusty, and an injection of new life into a system that was beginning to look frayed around the edges.

This is how Army handled the situation. Instead of requiring 180 hours of military subjects (not credit hours, but hours of attendance) during the first two years of the ROTC program, the total was cut to 150.

In the last two years, 45 hours a year of related rather than strict military subjects of study are allowed. Further, provision was made for the civilian members of a university faculty to teach certain subjects, such as American Military History, during the first two years.

From a career standpoint, the services are working hard to get the most out of the younger reserve officers that come into the service for less-than-a-full career.

This is the aim of a re-write currently in the mill for the Reserve Officers Personnel Act. Actually, the efforts of the services are aimed in two directions, the second of which is to avoid the need to unnecessarily penalize Reserve Officers on Reductions-in-Force.

Stay Longer?

The more important goal, however, is to "put guts in our reserve program," in the words of one Army man. The same officer explains: "The Army is a young man's game, and this legislation will make us a young officers' corps. What we are trying to do is to bring our Reservists in line with our Regulars, in terms of age, education and length of service."

In any of the services, there is a fairly heavy investment of dollars in bringing an officer up to the standards of the service. And unless the officer in question can be kept in the service for more than two or three years, the investment more than likely will not pay for itself.

(This, incidentally, is tremendously magnified in particular cases: it costs over a quarter of a million dollars to train a Strategic Air Command pilot, nearly as much for a carrier-rated Navy pilot.)

Going one step further in the career of the potential military officer, Defense is currently raking its Officer Personnel Act over the coals. Handling the job is a committee of eight retired general and flag officers, two from each service.

Depending on who you talk to, the deadline for completion of the study is early next summer, or at least a year away. But on this point, there is agreement: the so-called Bolte committee is handling the biggest single legislative project in the military personnel area that exists today.

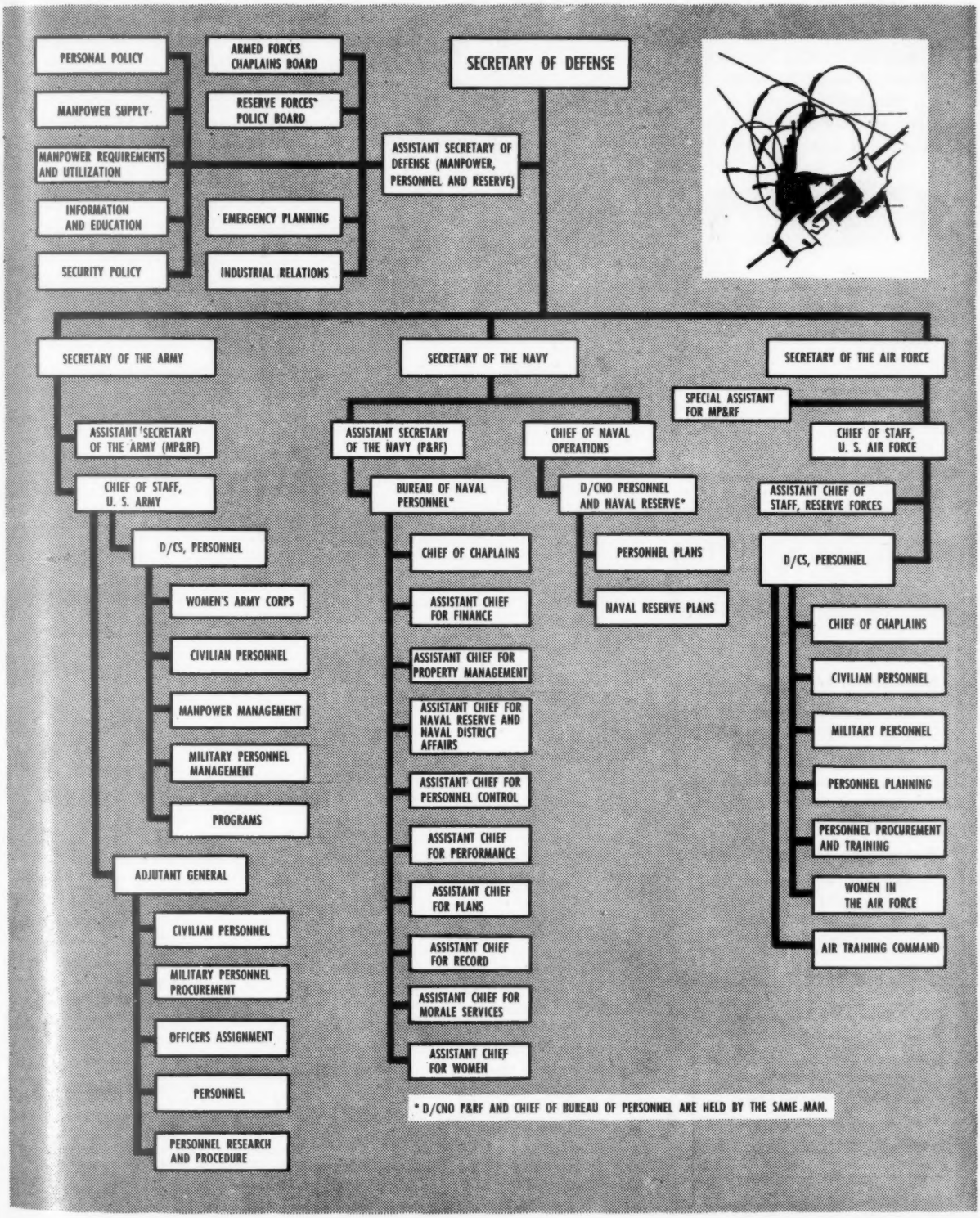
The committee is looking basically for more standardization in the laws that govern the career of the profes-

sional military officer—standardization with the aim of providing the best possible career structure for the military officer, regardless of which service he happens to be in.

Taken as a whole, the results of the Bolte study should be a major step in the right direction as far as providing a more reasonable overall officer career structure.

In one area, the problems that the Navy is facing are perhaps typical of those of the other services. Simply, the problem is this: with the rapid advances in technology that the Defense Department as a whole is undergoing, there is a need not only for better trained people, but more of those on

Setup for Personnel . . .



Common Stock Investment Plan

For as little as $10 a month you can purchase shares in HAMILTON FUNDS. Hamilton is an investment fund holding common stocks of over 80 corporations, selected for income and growth possibilities.

Hamilton Funds

HAMILTON MANAGEMENT CORP.
Dept. H-4 Box 5061, Denver 17, Colo.

Please send prospectus-booklet without obligation.

Name_____

Address_____

City_____ State_____

INCOME...

NOW?
Keystone Income Fund
A Mutual Investment Fund in securities selected for *CURRENT INCOME*

LATER?
Keystone Growth Fund
A Mutual Investment Fund for possible long term growth of capital and *FUTURE INCOME*

THE KEYSTONE COMPANY,
50 Congress St., Boston 9, Mass.

Please send me prospectus describing
☐ Keystone Income Fund
☐ Keystone Growth Fund
AF-18

*Name*_____

*Address*_____

any given ship or at any given installation.

A Navy Captain explains the situation: "In the good old battleship Navy, when we ran peacetime maneuvers, we could do it with a real skeleton force. When it came time to fire the guns, we simply requisitioned all of the storekeepers and made gunners out of them."

"In today's Navy, there aren't many storekeepers who also qualify as missile men. But even more important, we have to carry practically a full crew on today's ships just to keep them running. Using the complex fire control equipment, for instance, that we do today, we just can't get away with anything less than experts."

To meet the problem, Navy has moved in a fairly logical direction, although it is not the best way of maintaining a fully balanced force. One Captain sums it up: "In these situations, the shore establishment always gets it in the neck.

"Our manning levels on shipboard have gone up over the past couple of years, and by shaving things closely, we are hoping to make more headway in the future. But it's a long, hard job."

One further complication exists in the civilian personnel area. Here, rising personnel costs are forcing a gradual reduction in force. This means, for instance, in Army's case, that there has been a 2% per year drop in the number of civilian employees on the payroll, having to do exactly the same job that was done seven years ago when the trend down began.

This means a total fall-off of 10.2% since June 1956. Shrugs one manager in this area, "It means that we spread a little less paint, do a little less maintenance work, and let a lot of things slide that really should be done."

The dilemma that the Defense personnel manager faces is a tough one. He must skate the thin ice that separates a marginally effective manpower force from an inadequate one, and must do it with what practically any industry would consider inadequate resources.

He is faced with violently fluctuating personnel requirements, with no resemblance to the seasonal changes that, for instance, the automotive industry can count on.

And the whole job must be performed under a tremendous body of legislation, and the unrelenting eyes of the Congress.

That the job is done at all is somewhat surprising; that it should be done as well as it is under the many handicaps it faces is perhaps the most fitting comment of the caliber of men who must grapple with it. ■

Adversisers' Index

Acme Visible Records, Inc. 121
Aerojet-General Corp. 14
AiResearch Mfg. Div., The Garrett Corp. 59
Allison Div., General Motors Corp. 61
Automatic Electric Co. 127
Bristol Siddeley Engines Ltd. ... 19
Chance Vought Aircraft, Inc. ... 6
Consolidated General Products .. 114
Continental Aviation & Engineering Corp. 88
Denison Engineering Div., American Brake Shoe Co. 9
English Electric Co. 57
Equipto 4
Graphic Systems 122
Hamilton Management Corp., The 126
Hoffman Electronics Corp., Military Products Div. 128
Hughes Aircraft Co. 30, 31
International Business Machines 18
Keystone Co. of Boston 126
Kleinschmidt, Div. of Smith-Corona Marchant Inc. 2
Lavoie Laboratories, Inc. 85
Lockheed Aircraft Corp.
Georgia Div. 16, 17, 51
Missile & Space Div. 74, 75
Management Control Charts Co. 118
McDonnell Aircraft Corp. 3
Monsanto Chemical Co. ..10, 11, 12
Northern Ordnance Inc. ... 71, 121
Pan American World Airways, Inc. 55
Philco Corp., Government & Industrial Group 29
Radio Corp. of America, Defense Electronic Products 20
Remington Rand UNIVAC, Div. of Sperry Rand Corp. 8
Republic Aviation Corp. 81
Sylvania Electric Products, Inc. 68, 69
Teletype Corp. 15
Vitro Laboratories Div., Vitro Corp. of America 53
Wassell Organization 108
Westinghouse Electric Corp., Defense Products 13

CLASSIFIED

AN FITTINGS & HARDWARE
Stainless, Aluminum, Brass, Steel
All sizes-immediate delivery from world's largest shelf stock. Buy direct from manufacturer. Lower prices—quicker service. Send for free wall charts showing complete line of AN and MS fittings and hardware. We also machine parts to your own special print.
COLLINS ENGINEERING CORPORATION
9050 Washington Blvd., Culver City, California

REPRESENTATIVE WANTED in your territory. From your desk you can earn a substantial addition to your income. Only written contacts with your clients! Write for particulars and further details to VKK-Office, Vienna 66, P.O.B. 128, Austria.

The sure hand of AE in Coordinating Communications

AE CAN DO

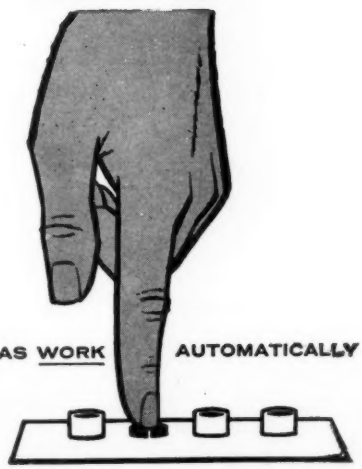
AE is an old hand at developing military communications devices and systems with unusual capabilities.

A prime example is the coordination device used in conjunction with the AE-developed automatic teletypewriter switching center.

Messages on punched tape arriving at a routing center are automatically given proper priority status... earmarked for single or multiple destinations and assigned to the first available open circuits for regional or global transmission to command centers.

Complex detailing and switching such as this is a logical extension of AE's wide experience in the design of complex circuit routing systems for automatic telephone exchanges.

If you have a tough problem in communications or control, AE can supply the answers – and provide the components or complete control systems to wrap it up. A letter or phone call (Fillmore 5-7111) to the Manager, Government Service Division, Automatic Electric Sales Corporation, Northlake, Illinois, will bring quick results.



AUTOMATIC ELECTRIC

Subsidiary of

GENERAL TELEPHONE & ELECTRONICS

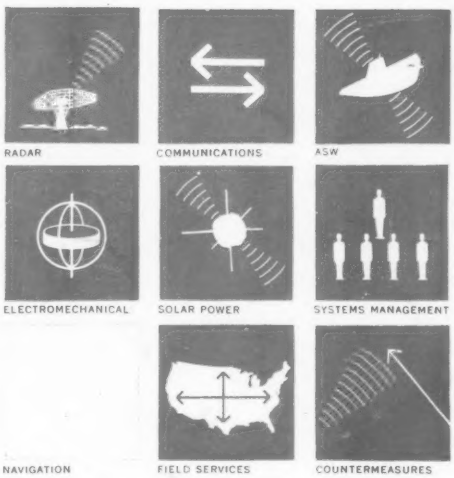
GENERAL SYSTEM

MAKING IDEAS WORK AUTOMATICALLY

Hoffman

navigation problems?

Reliable navigation equipment is a must if a pilot is to reach his destination safely and on time. Hoffman, producer of the Air Force and Navy TACAN (Tactical Air Navigation) systems, has specialized in solving navigation problems for the United States military services since World War II. Hoffman has developed and built both the airborne portion of TACAN and specialized ground support equipment, as well as navigational computers and other inertial components. Hoffman's experience in the manufacture of navigation systems provides a capability-in-depth to assist you in solving your navigation problems.



Hoffman / ELECTRONICS CORPORATION

Military Products Division

3740 S. Grand Avenue, Los Angeles 7, California

Significant developments at Hoffman have created positions for scientists and engineers of high calibre. Please address inquiries to Vice President, Engineering.